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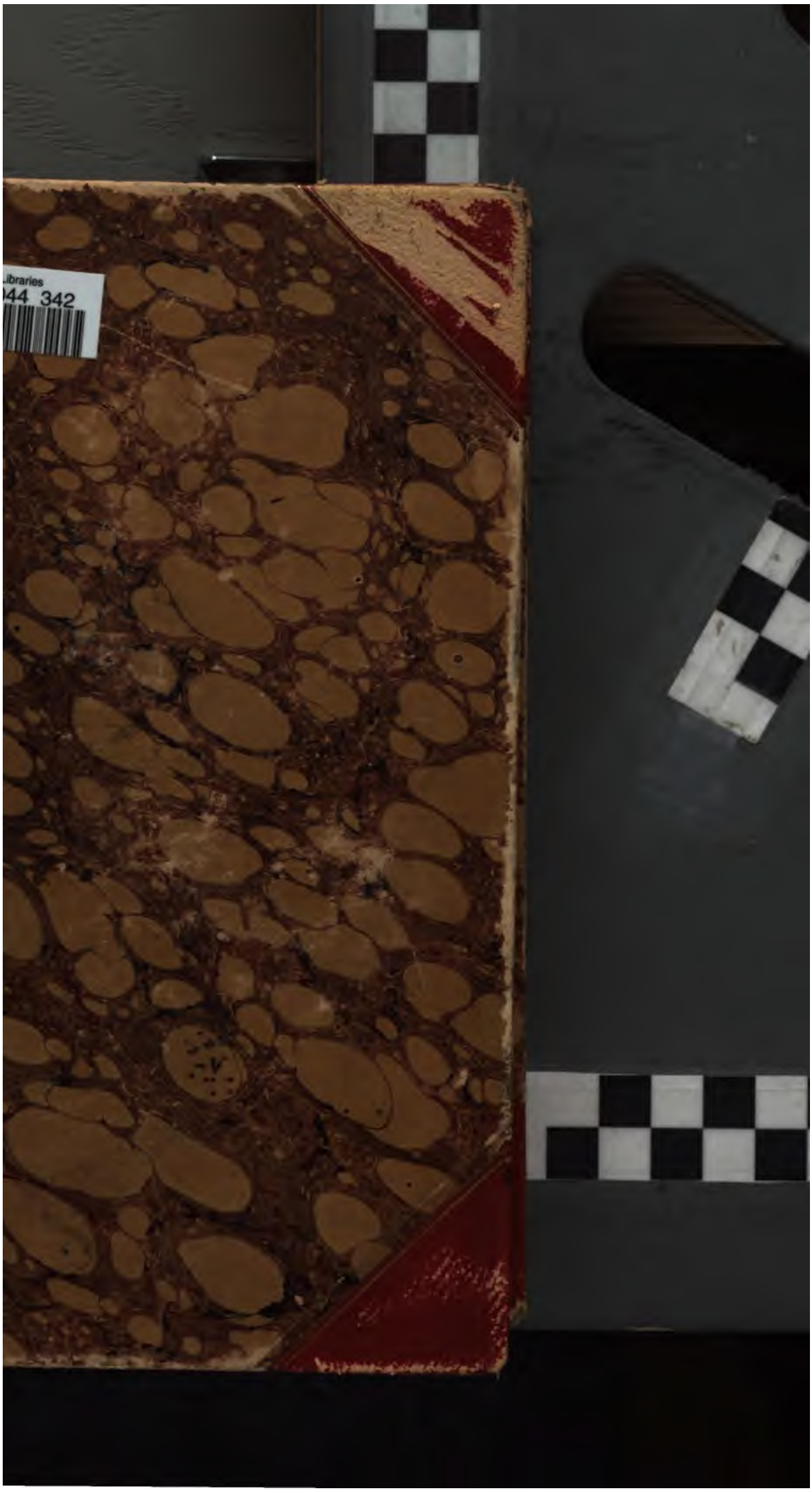
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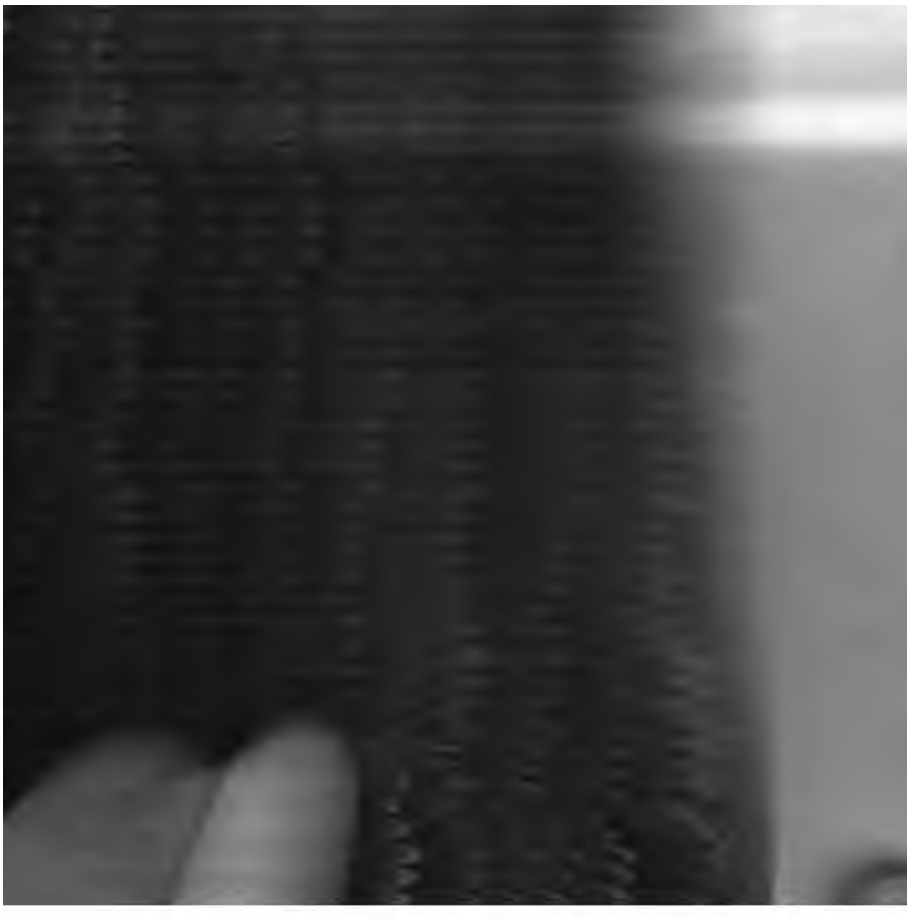

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MEXICO IN 1827.

BY

H. G. WARD, ESQ.

HIS MAJESTY'S CHARGÉ D'AFFAIRES IN THAT COUNTRY

DURING THE YEARS 1825, 1826, AND PART OF 1827.

IN TWO VOLUMES.

VOL. II.

LONDON:
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BOOK THE FOURTH.

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MEXICO IN 1827.

BOOK IV.

THE MINES OF MEXICO. GENERAL OBSERVATIONS. SUBJECT, HOW DIVIDED.

THE large capitals which have been invested by British subjects, during the last four years, in the Mines of Mexico, and the differences of opinion that have prevailed, upon this side of the Atlantic, with regard to these speculations, induced me, at a very early period of my residence in New Spain, to devote a good deal of attention to this subject, and to endeavour to turn my stay in the country to account, by collecting all the information respecting it, that it was possible for me to obtain. I had not, however, prosecuted my enquiries long, when the investigation, which private curiosity had prompted me to undertake, became a public duty, Circular orders having been transmitted to all his Majesty's Agents in the New World to endeavour to ascertain the exact amount of Silver raised, and exported, in the

countries in which they severally resided, during a term of thirty years: an account of which was to be forwarded to Government, together with an estimate of the probable future produce.

In the execution of these orders, I was obliged to embrace the question of Mining, in as far as Mexico is concerned, in the greatest possible extent: for it was necessary to procure, and embody, all the most authentic data now extant, with regard to the former produce of the Mines, and the proportion borne by that produce to the exports of precious metals from all the different ports of New Spain, before I could feel myself warranted in hazarding an opinion, at all, upon a subject so vast, and so important in all its bearings.

The future produce of the country, again, depended, in a great measure, upon the issue of the present attempt to work the Mines by the aid of Foreign Capital; while the probability of bringing each of the several undertakings, in which this capital is invested, to a more or less favourable conclusion, could only be ascertained by putting myself into communication with the Directors of the different Companies, and by visiting, in person, such of the principal Districts as were not so very far removed from the Capital, as to render it impossible to reach them, without a sacrifice of time, of which my other occupations would not admit.

In the course of these enquiries I have collected a considerable mass of information; and although,

from my total ignorance of mineralogy, I have derived less benefit from my personal observations than I might have done, had I been better prepared for the task, yet, in one respect, this very deficiency may have proved an advantage, since it compelled me to confine my investigations to subjects, of which I was better able to judge than of the quality of the ores; viz. the mode in which the general proceedings of the Companies have been conducted; the feelings of the Natives with regard to them; the local advantages which they possess; the difficulties which they have had to surmount; the extent of the outlay of each; the progress already made in their respective works; and the expectations which that progress seems to warrant, with regard to the future.

Upon all these points, the opinion of an impartial observer will not (I hope) be unacceptable to those engaged in Transatlantic Mining adventures; while, to others, it may be interesting to learn in how far those denunciations of fraudulent schemes, and Stock Exchange speculations, with which the Press has abounded during the last two years, and to which property to such an extent has been sacrificed, are, or are not, founded, in as far as regards New Spain.

It will be necessary, in order at once to satisfy curiosity, and to remove all reasonable causes of doubt, to enter into this subject at considerable length. I shall therefore divide what I have to

communicate, into four Sections, which will embrace the following points:—

First Section.

A Comparative Statement of the Produce of the Mines of Mexico during a double term of fifteen years, before, and since, the Revolution of 1810, with an account of the exportation of Specie, during the same period.

Second Section.

The Mining System of Mexico before 1810: the changes which occurred from that time till 1823, when the idea of Foreign Companies was first suggested: the number of these Companies now established in Mexico; their outlay; the extent of the undertakings in which they are engaged; the difficulties with which they have had to contend; their progress and state in 1827.

Third Section.

Whether the large Capitals which have been remitted to Mexico, and invested in the Mines, by British subjects, and on British account, are likely to be productive of adequate returns to the Adventurers; and, within what period it may reasonably be expected, that those returns will become sufficiently considerable to make the general produce of the Country equal, or even exceed, the annual average amount derived from the Mines before the year 1810?

Fourth Section.

Some general Observations upon Mexico as a Mining Country, with an enquiry as to the probability of her being enabled, by her mineral treasures, to multiply her commercial relations with Great Britain, and to acquit the interest, of whatever loans she may have contracted there.

The answers to these Queries, in conjunction with the statistical details contained in the Vth and VIth Books of this work, which will consist, principally, of an account of my journey to the Mining districts of the Interior, will convey nearly all that I have to communicate upon a subject, the importance of which, both to Mexico and to England, rose in my estimation with every step that I took in my investigations respecting it. Nor do I despair of conveying a similar impression to my readers, provided they will divest themselves of those hastily conceived opinions, by which judgment is so often warped, and under the influence of which it is as useless to affect to search for truth, as it is impossible to attain it.

SECTION I.

BEFORE I enter upon the enquiry which is to form the subject of this Section, viz. "A comparative statement of the produce of the Mines, during a double term of fifteen years, before and since the Revolution of 1810, with the proportion borne by the Produce to the Exports of the precious metals, during the same period;" it is necessary to premise, that it is almost impossible, from the want of authentic data, to institute any exact comparison between the quantity of Gold and Silver raised in any two years of these two periods, or to fix the proportion borne by it, in each year, to the Exports.

The utmost that can now be attempted, is, to form a reasonable estimate of the total Produce, and total Exports, of each fifteen years, without pretending to arrive at an exact analysis, the materials for which no longer exist. During the Civil War, the Archives, not only of the College of Mines, (to which Humboldt had access, and by which the produce of each separate District might have been ascertained,) but

of almost all the Mining Deputations,* were destroyed; and, after the most diligent enquiries, both in the Capital, and the Interior, I have been able to obtain but few, and scattered remnants of those valuable documents, which had accumulated in the great mining Provinces, during the three preceding centuries. Even the registers of the sums paid into the *Cajas Provinciales*, (Provincial Treasuries) as the King's Fifth, have disappeared; and their loss is the more to be regretted as they would have furnished data, upon which the total Produce might have been easily, and correctly computed.

The Coinage, therefore, is the only standard that can now be adopted; and although this, from its nature, cannot comprehend the whole amount of the precious metals *raised*, (some portion of which, in each year, was not converted into dollars,) yet, if about One million of dollars be added to the average of the Mint Returns, for Silver not registered at all, and registered Silver worked up into plate, (the abundance of which, in Mexico, was, at one time, proverbial,) there will not, I believe, be any reason to suppose that the actual Produce of the country, during the fifteen years which preceded the Revolution, much exceeded the estimate thus formed.

With regard to the Second Period, which commences with the Civil War, the difficulty of forming

* *Vide* Section II. for an explanation of this term.

any correct calculation of the annual produce of the country, is much increased.

The returns of the Mint of Mexico are of no avail, as, during the years 1810, 1811 and 1812, Mints were established at Guănăjūătŏ, Zăcătēcăs, Guădălăjără and Dŭrāngŏ, with which the Mint of the Capital had no connexion, and over which it exercised no control.

Nor do the returns of all these establishments combined, lead to a more satisfactory result; for there are many obvious reasons why they cannot be regarded as affording a correct estimate of the Produce:

1st. Because a large proportion of the Silver sent to the Mints was not Silver *then* extracted from the mines, but Plate belonging to Churches and private families, the whole of which was melted down during the Revolution, in order to supply the rapid decrease of the circulating medium.

2ndly. Because the Coinage in the Provincial Mints was so bad,* and the quantity of base metal used as alloy so great, that even a correct account of the number of dollars struck off, would not be found to give a just idea of the quantity of Silver, which they contained.

3rdly. Because, of the large sums which passed through the hands of the Revolutionary Chiefs,

* The dollars which have survived this period of disorder, are now only taken at a discount of from fifteen to twenty per cent.

(some of whom worked mines of considerable importance,) no account was ever given. And,

4thly. Because the gold contained in the silver, (a great abundance of which is found in the ores of some mines,) was never properly separated from it, after the communication between the Interior and the Capital was closed. None of the Departments possessed a Casa del Apartado, (in which the chemical process of separating the two metals, when combined, is performed;) and, although some portion of the gold may have been obtained by the use of quicksilver in the Ārāstrĕs, (crushing mills,) whatever remained incorporated with the silver was sacrificed; and, as the amount of gold, produced annually, before the Revolution, averaged 1,100,000 dollars, (a great part of which passed through the Casa del Apartado,) this loss, in fifteen years, must have amounted to a very considerable sum.*

These observations sufficiently prove the unavoidable inaccuracy of any estimate that can now be formed, respecting the amount of the precious metals raised from the Mines of Mexico, during the fifteen years immediately subsequent to the Revolution: but having pointed out the difficulties that

*. I have myself seen ores from Guārĭsămēy, at the Mint of Durango, which contained 2100 grains of gold to the Marc. (there are 576 grains in the ounce.) The mine of Rayas has produced ores containing 2700 grains; and 550 grains per Marc is by no means an uncommon *ley de oro* (proportion of gold) in the mine of Villalpando, at Guanajuato.

must be encountered, and the impossibility of so entirely surmounting them as to arrive at any very accurate conclusion, I shall proceed, without farther preamble, to state the results of my enquiries with regard to the Produce and Exports of each of the two periods under consideration.

By the annexed Table, (No. 1,) it appears that the registered Coinage of the Mint of Mexico, from the year 1796 to the year 1810, (inclusive,) amounted to $242,114,285 dollars; which gives an average of $22,807,619 dollars for each year.

To this I should add for Silver, (registered and unregistered), *not* coined, 1,192,381 dollars; thus giving Twenty-four millions of dollars as the whole annual average Produce of the Mines of Mexico during the fifteen years which immediately preceded the Revolution of 1810.

The registered Exportation from Veracruz, during the same period, on the account of the merchants, was, according to the Balanza General, or Annual Report of the Consulado of Veracruz,

	Dollars.
To Spain (in fifteen years) .	91,340,275
To Spanish America . .	22,251,822
To Foreign Countries direct, in 1806-7-8, and 9 . . .	27,892,903
Total .	141,485,000

The Average Commercial Exportation, therefore,

to the East, in the fifteen years, would be 9,432,333 dollars, 2 reals.*

The Exports of the Royal Treasury (not included in the Balanza General,) are not to be ascertained by any recent document; I have, therefore, been forced to take as the basis of my present calculation, Humboldt's Table of the Exports on the King's account, to Spain, and to the Spanish Colonies, during a term of thirteen years, (from 1779 to 1791,)† which gives 108,428,677 dollars as the Total, or 8,340,667 dollars, 3 reals, as the annual average amount of each of the thirteen years.

To these, again, must be added 2,000,000, or 2,500,000 dollars, as the annual amount of illicit extraction by those engaged in the smuggling trade; most of the articles thus introduced being paid for in specie upon the spot.

The total annual Exports appear, therefore, to have been:

From Veracruz	Dollars.	Rs.
On Merchant's account	9,432,333	2
On King's account	8,340,667	3
Carried forward	17,773,000	5

* The Average of Commercial Exports given here differs from that given in the Analysis of the Balanza General, in the last Section of the preceding Book, in as much as the calculation there embraces a term of twenty-five years; while here it only comprehends fifteen years, and ends exactly at the time when the registered commercial Exports began to decrease.

† Vide Essai Politique, Book V. Chapter XII. page 444, 8vo edition.

	Dollars.	Rs.
Brought forward	17,773,000	5
From Acapulco (on both) . .	1,500,000	
Contraband Trade . . .	2,500,000	
Total average value of Exports	21,773,000	5

Allowing 227,000 dollars more, on each year, for the Contraband Trade which appears to have increased in value in each successive year, although its exact amount cannot be ascertained, we shall have a total Exportation of Twenty-two millions of dollars, to set against a total Produce of Twenty-four millions; so that, during the fifteen years that preceded the Revolution, the amount of the precious metals that accumulated in Mexico would appear to have been Thirty millions of dollars.

This estimate differs materially from that given by Baron Humboldt, who did not conceive, at the time of his visit, that the annual produce of the mines exceeded twenty-three millions of dollars.

This calculation was perfectly natural in 1803, the average of the Coinage, from 1796 to that year, having only been 21,750,249 dollars;* to which Humboldt adds 1,249,751 dollars, for silver not included in the Mint Returns.

But the Coinage from 1803 to 1810 inclusive,

* The Mint Returns from 1796 to 1803 (inclusive,) give 174,001,998 dollars as the Total Coinage during the eight years.

averaged 24,016,182 dollars (the total amount of the dollars registered in the Mint of Mexico, in these seven years, having been 168,113,278): and this circumstance sufficiently accounts for the difference in the average produce of the whole term, as given in the Essai Politique, and in the present calculation.

With regard to the benefit actually derived by the country from its mineral treasures, or, in other words, the annual addition to the circulating medium, (after paying the difference between the Imports and Exports, and the remittances on the account of the Royal Treasury,) which Humboldt estimates at One million of dollars in each year, the increased Produce likewise accounts for the increase in the annual accumulation, which I have estimated at Two millions of dollars.

I have no data that will warrant me in rating the average annual Exports, during the fifteen years now under consideration, higher than I have done, viz.: Twenty-two millions of dollars; although, if we divide that term into two periods, of eight and seven years, (from 1796 to 1803, and from 1804 to 1810 inclusive,*) we shall find the Average of the Commercial Exports to have varied from 8,561,753 dollars, to 12,105,047 dollars. In the Exports of the Royal Treasury, I do not believe that there was

* Total Exports from 1796 to 1803, (Veracruz) 56,859,768 dollars. Total Exports from 1804 to 1810, 84,735,332 dollars.

any material change. There is, therefore, nothing in the fluctuations of the Commercial Exports to affect the calculation with regard to the Average of the whole term; while the Produce, undoubtedly, rather exceeded, than fell short of, the Twenty-four millions of dollars at which I have estimated it; 1,192,381 dollars being, in the opinion of those whom I have had occasion to consult upon the subject in Mexico, a very inadequate allowance for the Silver not included in the Mint Returns.

I cannot, therefore, estimate the annual addition to the circulating medium, before the Revolution, at a less sum than Two millions of dollars; and I am the more inclined to conceive this calculation to be correct, because the Exportation of Specie during the last fifteen years, (from 1810 to 1825,) appears so much to have exceeded the whole Produce of the Mines, that the country, had it not been for the surplus which accumulated during this season of prosperity, must have been left without a circulating medium at all.

This brings me to the second part of my enquiry, viz. the Average annual amount of the precious metals raised from 1810 to 1825, with the Exports during the same period.

I have already stated the impossibility of forming any very accurate calculation upon the last of these points, with regard to which much conjectural evidence must be admitted. As to the first, (the Produce,) although, for the reasons mentioned in

the beginning of this Section, the returns from the different Mints cannot be said to furnish a correct estimate of the Silver raised from the Mines, they, nevertheless, comprise the only authentic data that can now be obtained, and I shall, consequently, make them the basis of my calculations.

By the annexed Tables (Nos. II. to VI.) it will appear that the Coinage, from 1811 to 1825 inclusive, in the whole territory of Mexico, was as follows:—

	Dollars.
In Mexico	111,551,089
In Guadalajara	4,868,760
In Durango	6,917,652
In Zacatecas	30,659,518
In Chihuahua	1,216,009
Forming a sum total of	155,213,012

from which, however, must be deducted 1,636,040 dollars, being the value of 396 *Tejos de oro* (Ingots of gold), and 4263 Ounces, (Doubloons) remitted upon the account of the first Loan by the House of Goldschmidt, and included in the Coinage of the Capital for the year 1825; and 300,000 dollars likewise received in gold, about the same time, by the United Mexican Company.

The remainder (153,276,972 dollars,) will give 10,218,464 dollars 6 reals, as the annual average Produce of the fifteen years.

Yet, small as this sum is, in comparison with the

Average of the registered Coinage before the Revolution, (22,807,619 dollars) it is impossible now to ascertain the Mines, or Districts, from which it proceeded.

Without regular Returns, it is difficult to show to what extent the effects of the Revolution were felt in each; but, in those Districts where records were kept, (extracts from most of which I have been enabled to obtain), the difference between the Produce of the fifteen years, before, and after, the commencement of the Civil War, appears to have been enormous.

In Guănăjūātŏ, the amount of the precious metals raised, diminished from 8,852,472 Marcs of Silver and 27,810 Marcs of Gold,* (the produce of the fifteen years preceding the Revolution†) to 2,877,213 Marcs of Silver, and 8109 Marcs of Gold; (or something less than one-third of the original amount of both,) which appears, by the annexed Table (No. VIII.) to have been the produce of the whole District from 1811 to 1825.

From Zacatecas, I have been able to obtain but partial accounts: it does not appear, however, by these, that any very great falling off took place in the early part of the Civil War, the Mines of Veta

* The Marc of Silver may be taken at 8½ dollars, and that of Gold at 136 dollars; so that the produce of Guanajuato in dollars, from 1796 to 1810, was 79,028,017 dollars, and from 1811 to 1825, 25,559,009 dollars.

† *Vide* Table VII.

Grande, (now worked by the Bolaños Company,) having yielded, from 1796 to 1810, 1,171,328 marcs of Silver, and from 1811 to 1825, 917,097 marcs. (Table IX.) The difference, therefore, on the whole term, was only 254,231 marcs, or 2,160,963 dollars. But Zacatecas, even in the years of its greatest abundance, never produced more than Two millions of dollars annually ;* and, notwithstanding the little change which occurred at Veta Grande, from the number of other Mines, (not comprehended in that Negotiation †,) which were unworked in 1823, it may fairly be assumed that these Two millions were, latterly, reduced to One.

The Mint Returns, indeed, appear to contradict the assumption, as they give something more than Two millions of dollars, as the average Coinage of each year. But the Coinage of Zacatecas did not consist of the produce of Zacatecas alone: it comprehended a part of the produce of Sŏmbrĕrētĕ, and Cătōrcĕ, with that of Pīnŏs, and Rāmŏs, and other small Districts of San Luis Pŏtŏsī, the whole of which was brought to the Mint of Zacatecas, in preference to that of the Capital, with the exception

* Humboldt gives the total produce in five years (from 1785 to 1789, at 1,264,991 marcs, which give an average of 2,048,484 dollars on each year.

† *Negotiation* is a Mexican Mining term, and signifies a number of Mines, worked as one undertaking, by an individual, or association of individuals, whose quota of expences and profits is divided into twenty-four *Barrs*, as they would be in working a single Mine.

of that portion of the Silver raised, that was conveyed to the coast in bars, without being converted into dollars at all, the general amount of which I shall have occasion, subsequently, to examine.

The average annual produce of Sombrerete, during this period, is stated, (though not upon the authority of registered returns) to have been 300,000 dollars, or about 200,000 dollars less than the ordinary produce, from the time of the great Bonanza of the Fagoaga family, (when Eleven millions of dollars were raised in eight months, from the Mine of El Păvĕllōn alone,) up to 1810.

The registered produce of the Mining Districts of San Luis Pŏtŏsī, (the most important of which was Cătōrcĕ) during a term of five years, before and after the Revolution, (for which alone I have been able to procure Returns,) is stated in the annexed Table, (No. X.) by which it appears that there was a decrease in the latter period of 8261 Bars of Silver, (each of 134 marcs, or 1139 dollars,) which gives a total difference of 9,409,279 dollars on the five years after 1810.

The produce of the Mines of Catorce in ten years, (from 1816 to 1825 inclusive,) according to an extract from the Registers, which has been recently transmitted to me, was 5,994,006 dollars; which, if one half of this sum, (or 2,997,003 dollars) be added for the five years not included in the Returns in my possession, will give 8,991,009 dollars, as the Total, or 599,400 dollars as the average annual pro-

duce of that District, on the whole fifteen years. Before the Revolution, Catorce was second only to Guănăjūătŏ in the amount of the Silver raised, the value of which was estimated by Humboldt, (in 1803) at Three millions and a half of dollars annually.

The produce of the Biscaina Vein, at Real del Monte, in seven good years before the Revolution, (from 1794 to 1801,) was Six millions of dollars, or 857,042 dollars per annum. From 1809 to 1823, it only yielded 200,000 dollars in all, or 14,285 dollars per annum.

If it were possible to obtain returns from the other Mining Districts, the disproportion between the produce before, and after, the year 1810, would be found to be equally striking.

In all, the principal Mines were abandoned, the Machinery was allowed to go to ruins, and the Silver raised was merely the gleanings of more prosperous times; the workings, (where any were attempted) being confined, almost entirely, to the upper levels.

Tasco, (which was an important military station to the South of the Capital) forms a solitary exception to this rule; for the town being constantly garrisoned by Royalist Troops, and only once taken by the Insurgents, the Tribunal de Mineria undertook to work the Mines there, which formerly belonged to the famous Laborde; and did so with such success, that the produce is supposed to have averaged 400,000 dollars annually.

The other Mining Districts in the vicinity of the Capital, (Păchūcă, Chīcŏ, Zĭmăpān, Tĕmăscāltĕpēc, Tlălpŭjāhŭa, el Ōrŏ, Zăctŭālpăn, Ăngăngēŏ, Sūltĕpĕc, and el Dŏctōr,) were all nearly abandoned, or their produce so much reduced, that no returns of it were kept.

The amount of the Silver known to have been raised since 1810, is, therefore, as follows:—

	Dollars.
Zăcătēcās, (average) . . .	1,000,000
Guănăjuātŏ, Gold and Silver, (average)	1,608,034
Cătōrcĕ, ditto	599,400
Sōmbrĕrētĕ, ditto . . .	300,000
Tāscŏ, ditto	400,000
Real del Monte, ditto . . .	14,285
Gūārĭsămēy, Săn Dīmās (included in Durango Coinage) . . .	461,176
Northern Districts, included in Chihuahua Coinage	316,767
Total given by Registers in my possession	4,699,662

The above Table is only meant to show the impossibility of attempting, in the present state of Mexico, to ascertain the actual Produce of the country by any other standard than that of the Coinage. It was in the different Mints that the Silver raised was ultimately concentrated, as they

alone afforded the means of converting it into the ordinary circulating medium of the country; and, with the exception of the Bars exported, direct, from the Eastern and Western Coasts, their Registers undoubtedly afford the fairest estimate of the real Produce.

The average amount of these, on the whole Fifteen years, being, as we have seen, 10,270,731 dollars, it becomes necessary to add no less a sum than 5,571,069 dollars to the returns of produce from the principal Districts, as given above, in order to make them equal in amount to the annual Coinage.

In any country but Mexico, it would be absurd to suppose that so large a mass of Silver could be raised, annually, from sources comparatively unknown; but, in New Spain, there is nothing either impossible, or improbable, in the supposition.

It is a fact universally admitted, that, in almost all the Mining Districts, although the towns have been ruined by the emigration of the wealthy inhabitants, whose capitals were formerly invested in Mining operations, the lower classes have, throughout the Revolution, found means to draw their subsistence from the Mines.

Under the denomination of *Buscones*, (Searchers) they have never ceased to work; and although, from the want of method in their operations, they have done the most serious injury to the Mines themselves, they have, in general, contrived to extract from the upper levels, or from the old work-

ings, neglected in better times, for others of greater promise, a very considerable quantity of Silver.

This desultory system is still pursued in many parts of the country; and, at Zĭmăpān, Zăcualpăn, el Dŏctōr, and many of the Northern Districts, a large population is even now maintained by it.

The Silver thus obtained was sold, in each Real de minas, at from four to six, eight, and twelve reals per marc below the Mint price, to those of the inhabitants who could afford, on such terms, to wait for an opportunity of forwarding it, under convoy, to the nearest Mint, where it was exchanged for dollars. It was called, in its rough state, Plata Piña, or Plata Pasta; and, incredible as it may appear that the value of the precious metals thus brought annually into circulation, should have amounted to Five millions and a half of dollars, there is no other mode, at present, of accounting for by far the largest proportion of the Ten millions of dollars, which, unquestionably, were coined annually, in the different Mints of Mexico, during the Civil War.

One million, indeed, may be deducted from the Coinage of each of the four or five first years of the Revolution, for the *plate*, which was brought into circulation during that period.

But then, at least, as much must be added, upon the whole fifteen, for unregistered Silver sent out of the country in bars.

A very large proportion of the great Bŏnānză* of the Marquis of Bŭstămānte at Bătŏpīlăs, comes under this description, nearly the whole of his enormous wealth having been sent direct to Gūaymăs, and from thence to Gŭyăqūil and Pănămā, where it was shipped for Spain by the Pacific, or sent across the Isthmus to Portobello.

A similar exportation took place from all the Districts to the North of San Luis Pŏtŏsī, and particularly from Catorce, where, from the facility of the communication with the Coast, the Old Spaniards, by whom most of the mines were worked in 1810, were in the habit of shipping off all the Bars that contained a Ley de Oro, and no inconsiderable proportion of the pure Silver, to the Peninsula, without converting them into dollars at all.

I should, therefore, be inclined to estimate the total produce of the country, during the fifteen years ending in 1825, higher, by nearly One million of dollars, than the Mint Returns; and to suppose that, even during the worst of times, the value of the precious metals raised, annually, from the Mines

* *Bonanza* is a sea term, used by the Mexican Miners to designate a Mine in such a state as to cover all the expences of working it, and to leave a considerable annual profit to the proprietor. It implies no particular sum, for you may have a *bonanza* of a million, or a *bonanza* of 20,000 dollars; but it always signifies that things are going on satisfactorily;—in short, that you are in the Trades, with studding sails set below and aloft, and every prospect of a prosperous voyage.

of Mexico, cannot have averaged less than *Eleven* millions of dollars.

The immense amount of the Exports on private account; and the necessity of balancing, with the produce of the Mines, nearly the whole of the Imports of Foreign manufactures, (a part of which was covered, before the Revolution, by the Agricultural produce,) will explain the fact of the country having been reduced to a state of extreme penury, in the midst of this apparent wealth; the Minimum of the produce of Mexico being nearly double the Maximum of the average produce of any of the other Colonies of Spain, before the Revolution.*

It now remains for me to trace the effects of the Revolution upon the circulating medium of the country, by comparing, in as far as such a comparison is possible, the amount of the Exports of Specie, during the last fifteen years, with that of the Produce, in conjunction with the Specie, which may be supposed to have accumulated, during the fifteen years of prosperity, by which the Revolution was preceded.

The whole circulating medium of Mexico was estimated by Humboldt, in 1803, at fifty-five, or sixty millions of dollars.†

* The average produce of Peru, as given by Humboldt, in 1803, was . . . . . 5,317,988 dollars.
Buenos Ayres 4,212,404
New Grenada 2,624,760
Essai Politique, Livre IV. Chap. XI.

† I am induced to adopt Humboldt's estimate of the amount of the circulating medium of Mexico in 1803, not because I

To this I should add fourteen millions, as the increase during the Seven following years, when the average Exports were, according to my calculation, Twenty-two millions of dollars, and the average Produce Twenty-four millions; thus making the whole circulating medium, in 1810, amount to about Seventy-two millions of dollars.

The Mines, in fifteen years, appear to have produced 153,276,972, (according to the Mint Returns,) or 165,000,000, if the Average, which I have taken, of Eleven millions annually, be correct; which, with the Seventy-two millions already in existence, give a Total of Two hundred and thirty-seven millions of dollars.

The exact amount of the Exports in Specie, it is impossible to ascertain; but, during a period of disorder, which, at one time, amounted to almost total disorganization, the allowance made for unregistered Exports must be very large.

Respecting those of which an account was kept, I have obtained the only accurate information now to be procured, viz. extracts from the Registers of the Custom-Houses of Vĕrăcrūz, Ăcăpūlcŏ, Săn Blās, and Măzătlān, for which I am indebted to His Majesty's Consular Agents at those Ports.

conceive it to have been correct, but because, in a calculation, where so much must necessarily be left to conjectural evidence, I wish to have something more than a mere supposition of my own to serve as a basis. Sixty millions are thought by most people to be very much under the real amount.

By these it appears, that the Commercial Exports of Veracruz, from 1811 to 1820, were,

	Dollars.
To other Spanish Colonies . .	14,302,701
To Foreign Countries direct .	434,608
To Spain	53,553,897
Total	68,291,206

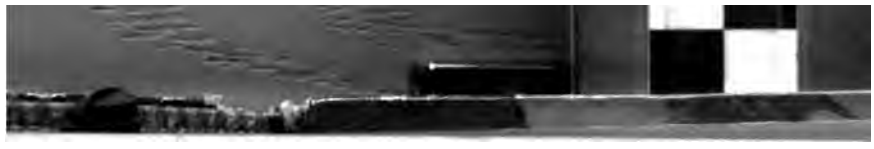
The Exports of

1821 were	Dollars	8,353,178
	Wrought Silver	67,488
1822 ...	Dollars .	7,489,780
	Wrought Silver	81,237
1823 ...	Dollars .	1,293,823
	Wrought Silver	30,779
1824		2,854,936
1825	(about)	6,000,000
Total from 1811 to 1825,		94,462,427

The Imports from 1811 to 1820 were,

	Dollars.
From Spain . . .	66,815,639
From Foreign Countries direct .	2,769,725
From other Spanish Colonies .	24,698,656
Total	94,284,020

The Imports from 1821 to 1825 inclusive, were:—



	Dollars.
1821 . .	7,245,052
1822 . .	3,723,019
1823 . .	3,913,092
1824 . .	12,082,030
1825 (No returns, therefore taken at the same amount as 1824)* . .	12,082,030
Total	39,045,223
Or, with the Imports of the ten preceding years, ...	133,328,243

From this amount must be deducted 27,770,774 dollars for the registered Exports of Agricultural Produce during the fifteen years under consideration; but this still leaves a balance against Mexico; the registered Imports being (with all deductions made) 105,557,469 dollars, and the registered Exports 94,462,427 dollars. The difference (11,095,042 dollars) must have been covered by the illicit extraction of Gold and Silver to that amount; there being no article of Agricultural Produce, with the exception of Cochineal, sufficiently valuable to hold out a similar inducement for contraband Trade. The registered shipments of Cochineal by Old Spa-

* The Imports for these years, include those of Alvarado; Veracruz having been nearly abandoned as a port in 1823, as stated in the preceding Section.

niards, who took this mode of making remittances to Europe, amounted in five years, (from 1821 to 1825) to 7,451,992 dollars; and as this bears a fair proportion to the Produce, (*Vide* Book I. Sect. III.) it is not to be presumed that the illicit extraction can have been very great.

My object in thus comparing the Exports of specie with the Imports of European Manufactures, (which may appear, at first, to have no immediate connexion with the question now under consideration,) is, to show that no part of the Spanish property withdrawn from the country since the commencement of the Revolution, *can* be comprehended in the registered Exportation from Veracruz, since the total amount of the Exports does not cover the total amount of the registered Imports, but leaves a balance of 11,095,042 dollars, to be paid by some other channel.

In the other ports it will be impossible for me to attempt a similar comparison, as I have not been able to obtain returns of Imports of any kind. I must, therefore, confine myself to a statement of the amount of the entries of the precious metals shipped in each port; and even these are but little to be depended upon, as the gentleman, to whom I am indebted for the extracts from the Registers of Sān Blās and Măzătlān, informed me that, in the opinion of the oldest merchants upon the Western coast, the *registered* Exports did not amount to above one half of the *real* amount of the Silver exported; in which

opinion Mr. Barcaiztegui, from whom I received similar returns of the Exports from Acapulco, fully coincided.

Having premised this, I shall annex the results of the enquiries of these gentlemen, in one Table, without adding, as *pièces justificatives*, the original Returns, which are in my possession, but are too voluminous for insertion.

Amount of Specie exported.

Years.	San Blas.	Mazatlan.	Acapulco.
1810			13,000
1811			25,883
1812			24,461
1813	346,884		108,331
1814	records missing	746,000	
1815	1,276,629	608,106	
1816	672,222	511,655	1,288,578
1817	757,086	343,719	154,000
1818	records lost	ditto	391,217
1819	ditto	ditto	218,689
1820	652,400	33,510	692,477
1821	1,570,542		23,191
1822	1,527,530	10,309	37,250
1823	1,054,708	84,420	223,000
1824	787,055	118,560	35,600
1825	182,243	165,797	57,075
Total	8,827,299	2,622,076	3,292,752

From Guaymas, there are no returns; nor is any

account whatever of Imports to be obtained from San Blas, on the West; or from Tampico, or any other port to the North of Veracruz, on the Eastern coast, during the period to which my enquiries are limited.

It is probable, however, that the registered Exports from San Blas and Mazatlan, do not more than cover the amount of the Imports: as, from the moment that the port of San Blas was opened to Foreign trade by General Cruz, in 1812, the value of the European manufactures with which the Table-land was supplied, through this channel, can hardly have been less than the average amount of the Exports of the Twelve years, viz.: 735,608 dollars.

At San Blas, therefore, as at Veracruz, no allowance can be made upon the registered Exports of Specie for the property of Old Spaniards transferred to Europe; the Exports being hardly equivalent in value to the European Imports. The same may be said of Ăcăpūlcŏ and Măzătlān: yet, the Spanish property actually realized, and abstracted from the capital of the country as it existed in 1810, is calculated by the best-informed Mexicans, (as I have stated in Section V. of the last Book,) at from Eighty, to One hundred and forty millions of dollars.

Let us first, therefore, see the amount of the whole registered Exports, and then consider the additions which must be made to it.

The value in dollars of the Exports from Veracruz, was:—

	Dollars.
From 1811 to 1820 . .	68,291,206
From 1821 to 1825 . .	26,171,221
San Blas (in the fifteen years) .	8,827,299
Mäzätlän (ditto) . .	2,622,076
Acapulco (ditto) . . .	3,292,752
Total, in fifteen years .	109,204,554

Of the Exports on the King's account, which are not included in this estimate, nothing certain is known; but, from the difficulty which the Viceregal Government experienced from 1811 to 1817, in raising funds to meet the exigencies of the moment in Mexico, I am induced to believe that, during the whole of that time, no remittances to Madrid can have been made. The Tobacco monopoly, and the duties upon Gold and Silver, of which the "*sobrante liquido, remisible,*" was composed before the Revolution, failed entirely; and, although new taxes were substituted for them, these were barely sufficient to defray the expenses of the war. After 1816, things became more settled, and some trifling remittances were made, which ceased again entirely upon the declaration of Independence in 1821, so that I should not calculate them in all, during the whole fifteen years, at more than ten millions of dollars.*

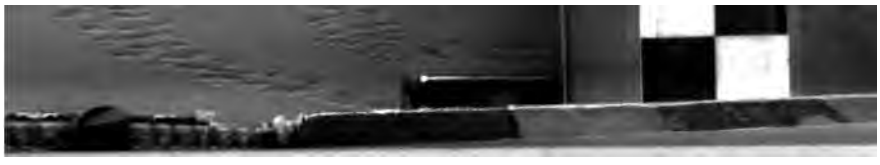
* This is merely a supposition, open both to inquiry and correction; for, with regard to the Royal Exports, I have no data to

With regard to the Smuggling Trade, this was by no means the case, for, if the demand for European manufactures became less amidst the general distress, the profits of the illicit trader increased; the facility with which goods were introduced being proportionably greater, and the reduction in the price consequently, such as to enable him to defy competition. I do not, therefore, conceive the amount of the Contraband Trade ever to have fallen below the average before the Revolution, viz. two, or two and a half, millions of dollars.

We must, therefore, make the following additions to the registered Exports as given above, viz.:—

	Dollars.
	109,191,454
Remittances to Royal Treasury .	10,000,000
Smuggling Trade, in fifteen years, taken at something below the average amount before 1810 . .	34,910,953
Allowance for the Exports of three years, the Returns for which have been lost at San Blas, taken at the average of the other twelve, viz. 735,608 dollars . . .	2,206,824
Balance of the excess of registered *Imports* in fifteen years at Veracruz	11,095,042
Total .	167,404,273

guide me. They probably exceeded my estimate considerably, in which case, the value of the Spanish property remitted to Europe might be still farther diminished.



This I regard as the amount of the Exports, in gold and silver, that must, *necessarily*, have taken place, in order to cover that portion of the Imports from Europe, that remained unpaid, after deducting the whole of the exportable national Produce; with the addition of ten millions only as remittances to Madrid.

The Spanish Property remitted to Europe constitutes, therefore, nearly the whole of the unregistered Exports, the amount of which must be entirely a question of conjectural evidence; there being no data whatever upon which a calculation could be formed. We must, therefore, be guided by a few leading points, which seem to require more particular attention.

The First of these, is the well-known fact that, before the Revolution, two-thirds of the capital of the country were in the hands of Spaniards, who engrossed the whole commerce of Mexico, and were, likewise, most extensively engaged in agriculture and mines.

The Second, is the equally well-ascertained fact, that almost all these Spaniards have quitted the country, and that the depressed state of the Mines, of Agriculture, and of Trade, is due, in a great measure, to the withdrawing of those capitals, by which they were formerly supported.

The Third, is the curious circumstance which I have endeavoured to develope in the preceding pages, namely, that no portion of this capital can be in-

cluded in the registered Exports, to the amount of which it must consequently be added.

Having arrived at this conclusion, it remains to fix the sum, at which the capital actually withdrawn in Specie must be estimated.

The lowest calculation of the Mexicans upon this subject is eighty millions of dollars, while many go as high as one hundred and forty millions.

The last is utterly impossible, for the Minimum of eighty millions would leave the country without any circulating medium at all.

I have supposed seventy-two millions to have been the accumulation of the precious Metals in Mexico in 1810; which, with the whole produce of the mines up to 1825, gives a total capital of two hundred and thirty-seven millions of dollars.

If we add to the Exports, as given in the preceding pages, (167,404,273 dollars,) eighty millions of dollars more, we should reduce the currency of New Spain in 1827 to ten millions of dollars *less* than nothing. I should be inclined, therefore, to take one third of the registered Exports, (109,204,554 dollars,) as a reasonable estimate of those of which no entry was made.

	Dollars.
This would give . . .	36,401,518
which, added to the total Exports, (according to my estimate of their amount) . . .	167,404,273
gives a Total of	203,805,791

and this, again, leaves about thirty-three Millions of dollars as the circulating medium of Mexico at the present day, after allowing nearly thirty-six millions and a half for the Spanish capital withdrawn since the commencement of the Civil War.

The extreme scarcity of money that has been felt in Mexico during the last two years, renders the result given by this calculation by no means improbable. In 1810, with a currency of seventy-two millions, and a clear surplus produce of two millions more, which appears to have been the case during the seven last years before the Revolution, nothing could equal the facility with which advances were obtained for every useful, or even useless, project. In 1826, with a currency reduced to thirty-three millions, and a produce of eight, (the whole of which is required to cover the Imports alone,) three per cent. per month has been paid in the capital for specie, and that, too, where security was given for the full amount of the advances, by deposits of goods.

As it is to the Mines that we must look for the source of every future improvement in Mexico, I shall endeavour, in the subsequent parts of this book, to point out the manner in which their progress is likely to be affected by the present scarcity, which, operating, as it were, in a vicious circle, checks the produce of that, by which alone it can be itself relieved. Here, it will be sufficient to state the conclusions which may be drawn from the facts detailed in the preceding pages, with regard to the point

more immediately under consideration, viz.: the comparative Produce and Exports of the Precious Metals in Mexico:—they appear to be,

1st. That the annual average Produce of the Mines of Mexico, before the Revolution, amounted to twenty-four millions of dollars, and the average Exports to twenty-two millions; and,

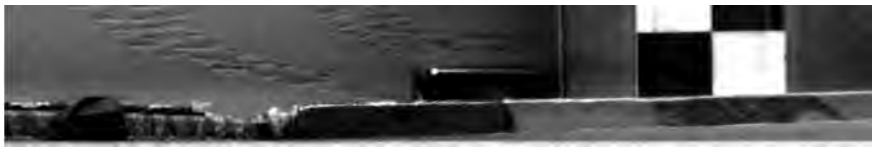
2ndly. That, since the Revolution, the Produce has been reduced to eleven millions of dollars, while the Exports in specie have averaged 13,587,052 dollars in each year.

To this I may add that the produce has decreased latterly, in consequence of the sudden abstraction of that portion of the Spanish capital, that still remained in the country, after the declaration of Independence in 1821.

The Old Spaniards, who had survived the first years of the Revolutionary War, (in the course of which many transferred the whole bulk of their convertible property to Europe,) retained a sufficient portion of their funds in circulation to give a certain activity to trade, and to the mines, in which most of them were, directly, or indirectly, engaged.

The Produce rose in consequence, (as tranquillity and confidence were restored,) from Four millions and a half of dollars (to which it had fallen in 1812) to Six, Nine, Eleven, and Twelve millions, which was the amount of the Coinage, in 1819, in the Capital alone.

In 1820, the Revolution in Spain, and the ap-



prehension of the effects which it might produce in Mexico, caused a considerable fluctuation, and the Coinage of the year in the Capital fell to 10,406,154 dollars. In 1821, when these apprehensions were realized, and the separation from the Mother-country became inevitable, the whole disposable capital, that had remained till then invested, was withdrawn at once, and the coinage in Mexico sunk to five millions; from which it fell to three and a half, at which it continued during the years 1823 and 1824.

In 1825, the foreign capitals recently invested began to produce some effect; but, in 1826, the total amount of the coinage in the five mints of the Mexican Republic did not exceed 7,463,300 dollars, as will appear by the Table, marked No. 12.

This is not to be regarded as indicating a failure on the part of the Companies, but merely as proving that the capital introduced by them had not then proved an equivalent for the capital previously withdrawn; or, at all events, that time had not been allowed to repair the ruinous consequences of the sudden abstraction of that capital, and the suspension of all Mining works that ensued.

But this inquiry belongs more properly to the Second Section, to which I shall accordingly proceed, begging leave to refer my readers to the twelve Tables annexed to this Section, (none of which are, I believe, as yet known to the Public,) for a more detailed examination of the data upon which my calculations are founded. They consist mostly of

extracts from Official Records, the originals of which are in my possession. Some of them I procured myself, during my visit to the Interior. For others I am indebted to the kind intervention of friends; but I can warrant the authenticity of all: and, whether the conclusions which I have drawn from them be thought correct, or not, the materials themselves will, I believe, be found to comprise nearly all the information, that is now to be obtained, respecting the points which it was the object of this Section more particularly to examine.

TABLE No. I. FIRST PERIOD.

Account of the Coinage of the Mint of Mexico for 30 years, from the year 1796 to the year 1825, both inclusive.

Years.	Gold.		Silver.			Total.		
	Dollars.	Reals.	Dollars.	Rls.	Grs.	Dollars.	Rls.	Grs.
1796	1,297,794	0 0	24,346,833	0	6	25,644,627	0	6
1797	1,038,856	0 0	24,041,182	7	0	25,080,038	7	0
1798	999,608	0 0	23,004,981	2	3	24,004,589	2	3
1799	957,094	0 0	21,096,031	3	3	22,053,125	3	3
1800	787,164	0 0	17,898,510	7	0	18,685,674	7	0
1801	610,398	0 0	15,958,044	1	0	16,568,442	1	0
1802	839,122	0 0	17,959,477	3	3	18,798,599	3	3
1803	646,050	0 0	22,520,856	1	9	23,166,906	1	9
1804	959,030	0 0	26,130,971	0	3	27,090,001	0	3
1805	1,359,814	0 0	25,806,074	3	3	27,165,888	3	3
1806	1,352,348	0 0	23,383,672	6	0	24,736,020	6	0
1807	1,512,266	0 0	20,703,984	7	3	22,216,250	7	3
1808	1,182,516	0 0	20,502,433	7	3	21,684,949	7	3
1809	1,464,818	0 0	24,708,164	2	6	26,172,982	2	6
1810	1,095,504	0 0	17,950,684	3	6	19,046,188	3	6
Total	16,102,382	0 0	326,011,903	0	0	342,114,285	0	0

TABLE No. II. SECOND PERIOD.

Years.	Gold.		Silver.			Total.		
	Dollars.	Reals.	Dollars.	Rls.	Grs.	Dollars.	Rls.	Grs.
1811	1,085,364	0 0	8,956,432	2	9	10,041,796	2	9
1812	381,646	0 0	4,027,620	0	9	4,409,266	0	9
1813			6,133,983	6	0	6,133,983	6	0
1814	618,069	0 0	6,902,481	4	6	7,520,550	4	6
1815	486,464	0 0	6,454,799	5	0	6,941,263	5	0
1816	960,393	0 0	8,315,616	0	3	9,276,009	0	3
1817	854,942	0 0	7,994,951	0	0	8,849,893	0	0
1818	533,921	0 0	10,852,367	7	6	11,386,288	7	6
1819	539,377	0 0	11,491,138	5	0	12,030,515	5	0
1820	509,076	0 0	9,897,078	1	0	10,406,154	1	0
1821	303,504	0 0	5,600,022	3	6	5,903,526	3	6
1822	214,128	0 0	5,329,126	4	6	5,543,254	4	6
1823	291,408	0 0	3,276,413	3	0	3,567,821	3	0
1824	236,944	0 0	3,266,936	2	0½	3,503,880	2	0½
1825	2,385,455	0 0	3,651,423	3	0	6,036,878	3	0
Total.	9,400,691	0 0	102,150,391	0	9½	111,551,082	0	9½

No. III.

Coinage of Guadalajara from 1814 (when a Mint was first established there) to 1825.

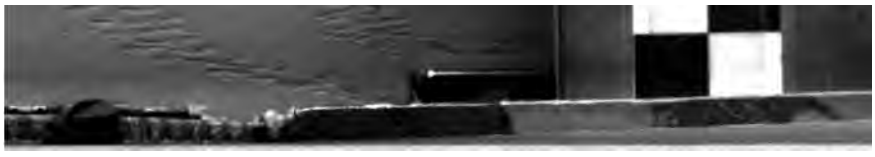
	Dollars.	Reals.
From Jan. 26, to Dec. 31, 1814 - -	901,949	
From Jan. 1 to April 30, 1815 - -	192,749	2
From Feb. 9 to the end of June, 1818	219,449	
From June 13 to the end of Dec. 1821	255,174	
In 1822 - - - - - -	931,645	
In 1823 - - - - - -	734,355	2
In 1824 - - - - - -	957,365	
In 1825 - - - - - -	676,073	4
Total	4,868,760	0

No. IV.

Coinage of the Mint of Durango from 1811 to 1825.

Years.	Dollars.	Reals.
1811 - - - -	247,439	
1812 - - - -	808,792	
1813 - - - -	784,240	
1814 - - - -	438,050	2
1815 - - - -	336,987	
1816 - - - -	314,193	
1817 - - - -	139,800	6
1818 - - - -	260,830	4
1819 - - - -	244,298	
1820 - - - -	136,793	
1821 - - - -	209,229	2
1822 - - - -	608,666	
1823 - - - -	818,430	
1824 - - - -	753,345	2
1825 - - - -	816,558	2
Total	6,917,652	2

Durango, July 15, 1826.



No V.

Coinage of the Mint of Zacatecas from Nov. 1810 to Dec. 1825.

Years.	Dollars.	Reals.
From Nov. 14, 1810, to Aug. 31, 1811	1,154,902	6
From Sep. 5, 1811, to March 26, 1813	4,776,971	4
From April 3, 1813, to July 29, 1814	2,455,000	0
From July 30, 1814, to May 16, 1818	3,635,107	6
From June 16, 1818, to Dec. 30, 1818	638,174	3
From Dec. 31, 1818, to Dec. 30, 1819	1,026,775	4
In 1820 - - - - -	764,011	6
In 1821 - - - - -	1,326,700	7
In 1822 - - - - -	3,610,455	0
In 1823 - - - - -	3,965,000	0
In 1824 - - - - -	4,093,062	5
In 1825 - - - - -	3,213,356	0
Total	30,659,518	1

No. VI.

Account of the Number of Bars of Pure Silver, and Bars with a Ley de Oro, entered in this Treasury from 1791 to August 1825, with their Value in Marcs.

	Bars.	Marcs.	Ounces.
Silver amalgamated - - -	3,687	477,778	1½
Silver smelted - - -	6,514	823,743	7½
Bars with a Ley de Oro - -	246	30,223	2
	10,447	1,331,745	3
Gold, pure and mixed with silver	672	14,392	2
Total.	11,119	1,346,137	5

Chihuahua, Aug. 27, 1825.

(Signed) RAMON MASCARENA.

No. VII.

Account of the Produce of Guanajuato from 1796 to 1810.

Years.	Bars.	Marcs of Silver.	Marcs of Gold.
1796	3,734	491,126	1,081
1797	5,265	707,042	968
1798	4,784	625,937	2,529
1799	3,825	499,966	1,972
1800	3,874	506,676	1,932
1801	2,638	342,608	1,457
1802	3,867	502,497	1,676
1803	5,706	750,887	1,538
1804	5,734	755,861	2,128
1805	5,510	723,789	2,495
1806	4,716	618,417	2,188
1807	4,417	578,735	2,396
1808	4,685	617,474	1,842
1809	4,737	620,012	2,189
1810	3,896	511,445	1,419
Total	67,388	8,852,272	27,810

Guanajuato, July 26, 1826.

(Signed) JOSE DE LA LUZ SANCHEZ.

No. VIII.

Produce of Guanajuato from 1811 to 1825.

Years.	Bars.	Marcs of Silver.	Marcs of Gold.
1811	2,067	270,206	550 0 0
1812	2,702	357,930	907 0 0
1813	2,204	292,211	462 0 0
1814	2,568	337,795	708 0 0
1815	2,088	275,905	841 0 0
1816	2,041	269,711	694 0 0
1817	1,580	199,706	523 0 0
1818	1,215	155,112	401 0 0
1819	1,149	145,362	450 2 2
1820	814	100,465	326 2 7
1821	600	73,983	298 3 6
1822	795	95,057	597 2 2
1823	804	96,802	413 5 5
1824	931	106,775	517 3 6
1825	830	100,193	419 4 0
Total	22,388	2,877,213	8,109 0 4

Guanajuato, July 26, 1826.

(Signed) JOSE DE LA LUZ SANCHEZ.

No. IX.

Produce of the Mines of Veta Grande from 1795 to 1825.

Years.	Marcs.	Ounces.	Years.	Marcs.	Ounces.
1795	41,900	3	1811	42,776	3
1796	35,570	4	1812	32,970	1
1797	10,533	3	1813	83,166	6
1798	15,702	6	1814	98,378	3
1799	8,178	5	1815	29,034	2
1800	17,348	3½	1816	45,197	6
1801	14,326	7	1817	39,243	6
1802	20,996	1	1818	50,770	2
1803	64,291	3	1819	59,954	7
1804	136,836	3½	1820	67,886	3½
1805	299,944	7½	1821	52,186	5½
1806	193,533	2	1822	86,293	3
1807	102,999	6	1823	94,452	3½
1808	184,230	2	1824	67,093	6½
1809	65,293	6	1825	67,699	6½
1810	101,550	4			
Total	1,313,237	2½	Total	917,105	0½

No. X.

Account of the number of Bars of Pure Silver, and Bars with a Ley de Oro, entered in this Treasury from 1800 to 1804, and from 1815 to 1819.

Years.	Bars of Pure Silver.	Bars with a Ley de Oro.
1800	2,388	59
1801	2,410	37
1802	2,426	63
1803	3,898	49
1804	2,784	60
Total	13,906	268
1815	1,724	12
1816	863	12
1817	1,026	10
1818	1,111	14
1819	1,135	7
Total	5,859	55

Treasury of the State—San Luis Potosi.

January 16, 1827. (Signed) JUAN GUAJARDO.

No. XI.

Account of the Produce of Catorce from 1816 to 1825.

Years.	Marcs.	Dollars.
1816	39,236 2	313,890
1817	89,888 4	719,108
1818	89,095 2	712,762
1819	87,549 7	700,339
1820	88,136 3	705,091
1821	77,862 4	622,900
1822	112,519 5	900,157
1823	86,634 5	693,077
1824	78,327 6	626,622
1825	79,186 4	633,492
Total	828,432 42	6,627,438

No. XII.

Mints.	Silver.	Gold.	Total Dollars.
Mexico	2,733,221	573,024	3,306,245
Zacatecas	2,427,844		2,427,844
Guadalajara	369,079	30,947	400,026
Durango	789,207		789,207
Guanajuato	539,978		539,978
Total	6,859,329	603,971	7,463,300

SECTION II.

THE MINING SYSTEM OF MEXICO BEFORE 1810; CHANGES WHICH OCCURRED FROM THAT TIME TILL 1823, WHEN THE IDEA OF FOREIGN COMPANIES WAS FIRST SUGGESTED. THE NUMBER OF THESE COMPANIES NOW ESTABLISHED IN MEXICO, WITH SOME ACCOUNT OF THEIR OUTLAY,—THE EXTENT OF THE UNDERTAKINGS IN WHICH THEY ARE ENGAGED;—THE DIFFICULTIES WHICH THEY HAVE HAD TO ENCOUNTER;—THEIR PROGRESS;—MORE PARTICULARLY DURING MY RESIDENCE IN MEXICO;—AND STATE IN 1827.

It is unnecessary for me to commence an inquiry respecting the present state of the Mining establishments of Mexico, by reverting to an epoch too distant to throw any light upon the character of the Mining laws now in force. I shall therefore merely observe that, after a period of considerable confusion and obscurity, during which all mining questions were decided by an appeal to a heterogeneous code introduced by Charles V., and composed of Old Flemish and German laws, of the fifteenth and sixteenth centuries, an entirely new form was given to the Mining institutions of New Spain, in the year 1777, by the establishment of a Supreme Council of

Mines, (denominated the Real Tribunal General del importante cuerpo de Mineria de Nueva España,) which was followed by the publication of a new Code of laws, (called Las Ordonanzas de Mineria,) and by the creation of Thirty-seven Provincial Councils, or Mining Deputations, (Diputaciones de Mineria,) each exercising a jurisdiction independent of the civil authority, in all mining cases, in the District assigned to it, with an appeal to the Supreme Tribunal, which resided in the Capital.

The Provincial Deputations were composed of deputies, chosen annually, by the Mining proprietors of each District; and these again deputed two members of their own body to reside in the Capital, who, with a Director, appointed by the Government, an Assessor, two Fiscals, and a Civil Judge, constituted the Supreme Tribunal. A College was added to this extensive establishment; and the King assigned, for the support of the whole, one Real de plata upon each Marc of Silver coined, to be deducted from the duty of Seigneurage, which had before been paid to the Crown.

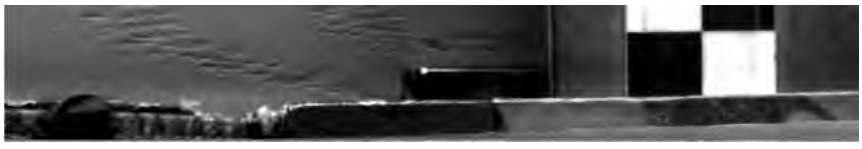
A part of this revenue was destined to cover the salaries of the Supreme Tribunal, (which did not, however, exceed 25,000 dollars in all,) while the remainder defrayed the expenses of the College, and furnished a Capital, out of which advances, (*Avios*) were made, at the discretion of the Tribunal, to Mining Proprietors, who required funds in order to complete their works. These advances were distri-

buted, (according to Humboldt) with more liberality than judgment; there being instances on record of individuals having obtained "*Avios*" of from two to three hundred thousand dollars, for single Mines. But although, in more than one case, the whole of the money thus improvidently invested was lost, great enterprises were encouraged by the certainty, which every respectable Miner felt, that, in an emergency, it would always be in his power to obtain assistance: and this, in conjunction with the removal of the commercial restrictions, by which the progress of the Country had before been cramped, but which were much diminished in 1778 by the Decree of Free Trade, exercised so beneficial an influence throughout New Spain that the produce of the Mines increased, (in a term of ten years,) from 112,828,860 dollars, (which was the amount of Silver raised from 1760 to 1769,) to 193,504,554 dollars, which were yielded by the mines from 1780 to 1789, when the ameliorations introduced began to produce their full effect. From 1790 to 1799, still farther progress was made, the produce having amounted to 231,080,214 dollars, or more than double what it had been in 1769; and there is little doubt that the increase would have continued in a similar ratio, during the next ten years, (from 1779 to 1809,) when the produce only amounted to 226,265,711 dollars, had not the munificent donations of Charles III. been swallowed up by the distresses of his Successors. During the wars which fol-

lowed the French Revolution, the Tribunal of Mines, in addition to a voluntary gift of half a million of dollars, was forced to assist the Royal Treasury with a loan of Three millions more. The whole of its disposable funds were swept away by these advances, and more than half its revenue has been absorbed since, by the interest of the money raised in order to meet such unexpected demands. The Miners, forced again to depend upon the speculations of individuals for "Avios," confined their operations within narrower limits; and although in two years of the term under consideration the Coinage attained the Maximum of Twenty-seven millions of dollars, (in 1804 and 1805,) still, there was a decrease upon the whole term, as compared with that ending in 1799, of nearly Five millions.

The Mining Code of Mexico, (Las Ordonanzas de Minería) having been published in English, with notes, it will be sufficient for me to observe, that the object of its provisions was rather to determine disputes between individuals, than to settle any differences between the Mining proprietors and the Sovereign. The whole Mining property of the Country was, indeed, supposed to be invested in the Crown, but the only use which the King made of his rights, was to concede to any individual, who "denounced" * the existence of a metalliferous vein

* To "denounce," in the Mining Code of Mexico, implies that process, by which a legal right of possession is obtained to a particular portion of any vein, worked or unworked, known



upon any particular spot, exclusive possession of a certain number of varas, (yards,) measured from that spot upon the course of the vein, which were called a Pertinencia, and which became the real, *bonâ fide* property of the Denouncer, upon condition that he should undertake certain works for the extraction of ores, within a given time. If this condition were not complied with, the spot selected reverted to its original state of unappropriated Royal Property, and might be again denounced, by any other individual, before the Mining Deputation of the District, which could not refuse a title to the new applicant, on his proving that, during the time specified by the Ordenanzas, no attempt had been made by the first denouncer to work the vein. No other intervention, direct or indirect, took place on the part of the Crown. The King (individually) was not proprietor of a single mine, nor is there one instance, since the Conquest, of an attempt having been made by the Government to interfere with the mode of working adopted by individuals, or to diminish the profits of the successful adventurer, by exacting, under any plea, or pretence, from the more fortunate, a higher rate of duties than that which was payable by the poorest miner to the Royal Treasury.

or unknown, which a Miner chooses to select for his operations. I have adopted the word because we have no equivalent for it in English. It probably originated with the first discoveries, when a person might be fairly said to announce, or denounce a vein, the existence of which was not previously known.

By this judicious liberality and good faith, the fullest scope was given for private exertion; and this, in a country where mineral treasures are so abundant, was soon found to be all that was requisite in order to ensure their production to a great extent.

The Duties, however, which were payable upon the whole of the Silver raised, were very considerable. They consisted of the King's Fifth, (reduced, subsequently, to the Demiquint, or tenth,) the Duty of One per cent. (*derecho del uno porciento*) and the Mint dues, (*derechos de Monedage, y Señoreage*) which amounted, in all, to $3\frac{1}{8}$ reals (of eight to the dollar) upon each marc of Silver, which contained 68 reals, but for which the proprietor received only 64. Where Gold was combined with the Silver, the duties of the Casa del Apartado were added, which made a total of $19\frac{1}{8}$ per cent. Those paid on pure Silver were $16\frac{2}{5}$.

The amount of these Duties was not nearly so detrimental to the interests of the Miner, as the necessity of transmitting the whole produce of his mine in Bars to the Mint of the Capital, where alone it could be converted into dollars. This, in the more distant Provinces, (from the enormous expence of land-carriage,) was equivalent to a very heavy additional duty, from which neither the Revenue, nor the Country derived any material benefit; but which tended, unavoidably, to confine all Mining operations to a small circle, and caused the rich Districts of the North to be neglected, while the Mining Capitals

were employed, almost exclusively, upon the poorer ores of the South. A similar effect was produced by the restrictions upon the sale of Quicksilver, the monopoly of which belonged to the Crown; for although, by a series of judicious reductions, the price of this essential article was so much lowered, as to place it within the reach of every class of Miners, still, the distribution of it, (which depended upon the Viceroy,) was by no means impartially regulated, the poorer Miners being generally sacrificed to the influence of the richer; while the necessity of concentrating the supply in one great Depôt, (the Capital) and of effecting the importation through one solitary port, (Veracruz,) rendered the possibility of obtaining a sufficiency for the regular reduction of ores, in the North, extremely uncertain, although the want of it entailed upon the Mining proprietor inevitable ruin.

Such were the principal characteristics of the Mining System of New Spain before 1810, at which time the country was supposed to contain 500 Reales, or Realitos, (spots in which mines were worked,) with from Three to Five thousand mines, (large and small,) included in the thirty-seven Mining Districts, or Deputations, into which the Viceroyalty was divided.

The names of these Districts, with those of the principal mines in each, may be found in Humboldt, (Book IV. Chapter II.) as given by a manuscript, drawn up by Don Fausto Elhuyar, (first Director

of the Supreme Tribunal,) for the Viceroy, Count Revillagigedo. I do not insert them here, both because I am unwilling to trespass unnecessarily upon the time of my readers, and because it will be more suitable to the purposes of the present inquiry to give, subsequently, a Table of those Mines, for which contracts have been entered into by British Companies, and to specify the *States* in which they are situated; that being now the only territorial division recognized in Mexico. It is, therefore, only necessary to repeat, what I have attempted to demonstrate in the first Section, namely, that the average annual produce of these thirty-seven Districts, during the fifteen years which preceded the Civil War, was Twenty-four millions of dollars.

The extraction of this enormous mass of Silver, was not, (as has been supposed in Europe,) the result of a simple process, in which the Mine owners and the Government were the only parties concerned, but rather the effect of a most complicated system, by which the Silver raised was made to pass through the hands of four or five immediate agents, before it was brought into circulation, or even paid the Duties to the Crown. Few of the old Miners were originally capitalists. Many were unable, at first, to obtain advances from those who were so, except to a very limited amount; and were thus compelled to carry on the works of their mines, by converting the first fruits into ready money, without waiting to ascertain the quantity of Silver which

the ores might contain. This led to the establishment of a class of middle-men, called *Rescatadores*, who bought up the ores at the mouth of the mine, and reduced them in Haciendas (Amalgamation works) of their own. The Rescatadores again, being mostly small capitalists themselves, had recourse, in their more extensive operations, to the opulent merchants established in the towns, who furnished them with funds, when required, on condition of receiving the Silver produced at a rate considerably below the Mint, or market price; (for instance, at six and seven dollars per marc, when the Mint price was eight;) and by this process, (which was called "*Avio á premio de platas*") both the risk and the profits were so subdivided, as to give the poor Miner great facilities at first, while the capitalist was enabled to invest his money, almost without fear of loss.

The system was carried to an enormous extent before the Revolution, and by it, almost all classes of the community were interested in the success of the mines, while a vast floating capital was employed in them, besides that which was, in some measure, withdrawn from circulation, and sunk in dead works. It gave an impulse to Mining operations altogether unprecedented in the history of the world; and as discoveries were pushed on all sides by the poorer adventurers, who required but very trifling advances to search for mineral treasures, it is more than probable that, if public tranquillity had continued undisturbed, the Mining produce of Mexico, at the

present day, would have exceeded, by at least one-third, the utmost produce of the richest years before the Revolution.

The Civil War entirely destroyed this chain of communication between the highest and lowest classes of Mining speculators. In many Districts the Haciendas of the Rescatadores were ruined, as were the machinery and works of the mines themselves. In others, water was allowed to accumulate to an immense extent, in consequence of the suspension of the usual labours; while in all, the merchants, who had before supplied funds for carrying on the different operations, withdrew their capitals, as soon as the intercourse between the Seat of Government and the Provinces was interrupted. In the years 1811 and 1812, the Agricultural produce of the country likewise decreased so rapidly, that it became difficult to procure the means of subsistence. The Mining towns were surrounded by Insurgent parties, which occupied the whole of the open country, and rendered it impossible either to receive supplies, or to make remittances, without the protection of a large escort; while the exactions of the officers, by whom these escorts were commanded, (exactions, which were reduced to a system, and in which the Viceroy himself largely participated,) doubled the price of quicksilver, and every other article consumed in the mines; and thus reduced the value of Silver to the miner so much, that the marc did not repay the cost of extraction, even with the richest

ores. The poor ores were allowed to accumulate untouched.

This was the real evil of the Revolution. It was not the destruction of the *matériel* of the mines, however severe the loss, that could have prevented them from recovering the shock, as soon as the first fury of the Civil War had subsided: but the want of confidence, and the constant risk to which capitals were exposed, which, from being in so very tangible a shape, were peculiarly objects of attraction to all parties,—led to the gradual dissolution of a system, which it had required three centuries to bring to the state of perfection in which it existed at the commencement of the War of Independence. I do not believe that I am guilty of any exaggeration in stating, that there never was a greater spirit of enterprise, more liberality, or, in general, better faith, displayed in any part of the world, than amongst the Miners of Mexico before the year 1810. Unexampled prosperity was their reward; and had freedom of commerce then existed, there is no doubt that the country would have derived the greatest permanent benefit from their exertions. As it was, riches easily acquired, were as lightly dissipated;—but little was done towards national improvement;—no fund was provided for future emergencies;—and, after the great convulsions of 1810, 1811, and 1812, nothing remained to denote, amidst the general wreck, the epoch of splendour which had so immediately preceded it.

The efforts of the Spanish Government to alleviate this distress were unavailing; although, in justice to Spain, it must be said, that whatever may have been the faults of her Colonial System in general, with regard to the Mines, she has always adopted a more liberal policy. This liberality commenced soon after the War of Succession, when, in order to conciliate the Mexicans, the King's Fifth was reduced to a Tenth, by a Decree dated the 30th of December, 1716. In 1769, the price of the Quintal of Quicksilver, (a Royal Monopoly,) was reduced from eighty to sixty dollars, and in 1777, to forty-one dollars including the freight to Mexico. In 1780, Gunpowder, (another monopoly,) was ordered to be sold at 4½ reals per pound, instead of six reals; and an exemption from Alcavalas was granted in favour of all articles consumed in the Mines; which exemption was so rigorously observed, that Don José Galvez, when establishing a small tax upon Maize, at Gŭanăjūatŏ, in order to improve the present entrance into the town, allowed the Maize for the consumption of the Mines to pass duty free.

By order of the same Count Galvez, in 1785, during a year of scarcity, the Miners were supplied with Maize from the Royal Stores, at the usual price. In 1793, the Government declared its intention not to raise the price of Quicksilver, even in time of war; and as recently as 1814, (8th August,) an order was issued, again exempting from the tax of Alcavalas, every article of ordinary consumption

in the Mines, and extending this privilege to all the Mining Districts.

But no encouragement, on the part of the Royal Government, could supply the want of capital, and of confidence; and, with the exception of some works at Catorce,* Zacatecas, and Sombrerete, which were prosecuted successfully, after the reverses of the Insurgents in 1814, and 1815, by small Spanish Capitalists, who resided upon the spot, Mining, throughout the Kingdom, was reduced to a mere shadow of what it had been. In 1821, even these partial works were given up, (on the Declaration of the Independence,) and most of the Spaniards who had invested money in them withdrew their capitals, and returned to Europe.

Such was the state of the Mining interests of Mexico, when the first Independent Government was established. Its attention was early, and unavoidably, drawn to the subject, because the Mines had involved in their fall both agriculture and trade, to which their restoration could alone give a new impulse.

This part of the subject, however, belongs more properly to the observations with which it is my

* The Emigrants from Catorce were very numerous; I mean those who returned to Spain, or France, with 60, or 70,000 dollars. The United Company has now almost all the Mines at Zacatecas, which were abandoned at this time, and also those belonging to Don Narciso Antitua, at Sombrerete, which he was compelled to give up just as he had completed the drainage.

intention to close this Book. Here it will be sufficient for me to state the means adopted in order to afford immediate relief.

By a Decree of the Regency, (dated 20th February, 1822,) the Duties formerly paid under the denominations of One per cent., Royal Tenth, Seigneurage, and Bocado, were abolished, as were those exacted during the Revolution, on Plata Pasta, or Silver in a crude state; in lieu of which, a Duty of Three per cent. upon the real value of the Gold and Silver raised, was substituted. The expense of Coinage was likewise reduced to two reals per marc, and the charge at the Apartado, for the separation of the Silver from the Gold in ores containing both, to two reals, in lieu of five and a half. In addition to this, the monopoly formerly enjoyed by the Casa del Apartado was done away with, and liberty granted to the Miners to perform the process of separating the Gold from the Silver, where, and as, they pleased.* They were likewise allowed to dispose of their Silver, (after presenting it at any of the Provincial Mints to be assayed, and paying the Duty of Three per cent.) as a marketable commodity, for which each was to obtain the best possible price.

* The United Mexican Company has taken advantage of this concession, on the part of the Government, to form an establishment in the Capital, in which, by a change in the process, they undertake to separate the two metals at a less expence than the Casa del Apartado.

The importation of Quicksilver was declared to be Duty free, and Powder, (although it continued a Government Monopoly,) was ordered to be delivered to the Miners at prime cost.

In making most of these concessions, the Government of Mexico only followed the example of the Peninsula; most of the reductions indicated above having been sanctioned by the Cortes of Madrid, at the suggestion of the Mexican Deputies, in June and July 1821; but the establishment of Mints in the different States, (their legal establishment, I mean,) is due to the Revolution; as is the free introduction of Quicksilver, on so many different points of the Coasts of the Republic. Both these are most important advantages; for the last opens an easy access to many rich Districts, to which Quicksilver could only be conveyed at an enormous expence before; while the newly erected Mints, when provided, as they will be in the course of time, with funds for the purchase of the Plata Pasta, as brought in by the poorer Miners, must promote the progress of Mining enterprises throughout the Federation, since, by destroying the Monopoly of the Capital, they diminish, most materially, both the time and the expence necessary in order to convert Bars into Dollars, at a distance (sometimes) of three and four hundred leagues from the place where the silver is raised; and thus add, specifically, to the value of every marc that the Mines produce.

But, notwithstanding these advantages, Capital

was wanting in order to turn them to account. The emigration of the Old Spaniards, who were, with few exceptions, the Aviadores, or Habilitators,* and the vast sums withdrawn by them from the country, during the years 1821 and 1822, rendered an accession of fresh Capitalists necessary, in order to restore the Mines to any thing like their former importance; and with this view, by an act of the Congress, the door was thrown open to Foreigners, who were allowed to become joint proprietors with Natives, on terms highly favourable to the adventurers, had they entered upon the field presented to them with a proper knowledge of the country, and of the nature of the enterprises which they were about to undertake.

Of the eagerness with which the clauses in this Act favourable to Foreign speculation were taken advantage of by His Majesty's subjects, it would be unnecessary for me here to speak, were it not for the very prejudicial influence which this eagerness has exercised upon the interests of the adventurers, by creating a ruinous competition at the very outset, and thus compelling many Companies, in lieu of proposing their own terms, to submit to those dictated by the Mexican Proprietors; and consequently, in some instances, to commence their operations

* To *habilitate*, signifies to furnish funds for working a Mine, with or without a share in the management of the works. *Habilitar*, and *Habilitador*, can only be rendered into English by adoption.

upon conditions so onerous, as much to diminish their prospects of success.

Before I attempt, however, to point out the errors that have been committed in this respect, and the consequences to which they have led, it will be necessary to state the number of the Companies actually in existence, the amount of the Capital invested in them, and the States and Districts in which it is embarked.

Without reckoning any of those Associations which started up, during the general mania for Mining, in England, and threw up their engagements in Mexico as soon as the feeling in favour of these undertakings subsided, there are, at the present moment, Seven great English Companies, besides One German, and Two American Companies, employed in working Mines in different parts of the Federation.

Of the names of these Companies, the nominal capital of each,* the capital actually invested, and the *States*, in which their labours are carrying on, a succinct account will be found in the following sketch.

* I use the epithet *nominal*, because great reluctance seems to have been shown latterly, on the part of the Shareholders of some Companies, to complete the advances for which they have rendered themselves liable; as if, had it been possible to restore the Mines to activity without a real, and *bonâ fide* investment to a much larger amount than they could themselves supply, the Mexicans would ever have consented to allow Foreigners to participate in those advantages, of which, during three centuries, their mines have been the source.

REAL DEL MONTE COMPANY.

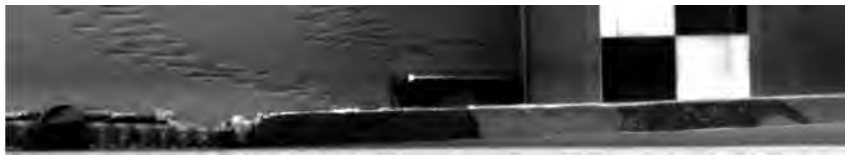
Director in Mexico, Captain Vetch.

Capital.	Invested.	States.		Mines.
£400,000.	About £400,000.	Mexico.	Real del Monte.	All the Mines on the two great Veins of Biscaina, and Santa Brigida, formerly belonging to the Regla family. The Mine of Moran. Mines on the Veins of Acosta and S^{a}. Esteban.
			Zimapan.	Lead Mine of Lomo del Toro, at Zĭmăpān. Eight Iron Mines at the Encarnacion, near Zĭmăpān. Mines of San Francisco, Guadalupe, and Don Martin, at Pechuga.
		Valladolid.		Mines of los Apostoles, La Machorra, and San Pedro Barreno, at Ozūmătlān.

BOLAÑOS COMPANY.

Directors, Captains Vetch and Lyon, R. N.

Capital.	Invested.	States.	Mines.
£200,000	About £150,000	Guadalajara or Jalisco.	Tepec, Intermedio, Concepcion, el Camichin Laureles, and Barranco, on the Veta Madre of Bolanos.
		Zacatecas.	Mines belonging to the Fagoaga family, at Veta Grande.



TLALPUJAHUA COMPANY.

Director, Mr. De Rivafinoli.

Capital.	Invested.	States.	Mines.
£400,000	About £180,000	Mexico	Seven Mines at *El Oro;* and
		Valladolid	Eighty-six Mines on all the principal Veins of the District of *Tlalpujahua*, including those of Coronas, Labordа, and Las Virgenes.

ANGLO-MEXICAN COMPANY.

Director, Mr. Williamson.

Capital.	Invested.	States.	Mines.
£1,000,000.	About £800,000.	Guănājŭātŏ	Vălĕnciănă, Mĕllādŏ, Tĕpĕyāc, Sĭrēnă, Vĭllălpāndŏ, and several small mines on the Veta Madre, and other Veins, at Guănājŭato.
		Mexico	La Cruz, San Fĕrnandŏ, Guădălūpĕ, and three other small mines at Zĭmăpān.
		Quĕrĕtărŏ	Four small Mines at San Crĭstōbăl and Măcŏnī.
		San Luis Pŏtŏsī	Mines of Cŏncĕpcĭōn, (a share,) Guădălūpĕ, de Veta Grande, and Mĭlāgrŏs, at Cătōrcĕ.
		Mexico	Mines of La Reunion, Soledad, Guadalupe, Santa Brigida, and El Rosario, at Real del Monte.

UNITED MEXICAN COMPANY.

Directors { Don Lucas Alaman. / Mr. Glennie. / Mr. Agassis.

Capital.	Invested.	States.	Mines.
£1,200,000.	About £800,000.	Guanajuato	Rayas, Sechó, Cata, La Calera, San Roquito, San Rafael, La America, Guadalupe, at Guanajuato.
		Guadalajara	Diamantillo and Guardaraya, at Comanja.
		Zacatecas	Quebradilla, Malanoche, San Bernabé, San Acasio, El Desierto, Loreto, at Veta Grande.
			Mines on the Veins of El Pavellon, and La Vetanegra, at Sombrerete.
		Chihuahua	La Divina Providencia, Animas, and Belen, at Jesus Maria.
		Oaxaca	La Natividad, Dolores, and a mine of Magistral, at Capulalpan.
			Mines on the Vein of San Pablo, at Teojomulco.
		State of Mexico	Mines of La Bomba, Santa Ana, Las Papas, San Miguel, San Antonio, and Santa Rita, at *El Chico*.
			All the Mines on La Veta Descubridora of *El Oro*, with those of San Acasio, and San Rafael.
			La Magdalena, Los Reyes, and La Guitarra, at *Temascaltepec*.
			San Antonio, and San Diego, at *El Christo*.
			San Mateo, at *Zacualpan*.
			Coronilla, at *Tetela del Rio*.

THE MEXICAN COMPANY.

Capital.	Invested.	States.	Mines.
		Veracruz	Copper Mines of Sumoloacan, between Las Vigas and Perote.
		Zacatecas	Some Mines at Fresnillo (not worked.)
		Oaxaca (near the Capital of the State.)	Mines of Dolores, Santa Ana, San Felipe Neri, Jesus, San José, La Soledad, &c.

CATORCE COMPANY.

Present Director, Mr. STOKES.

Capital.	States.	Mines.
Capital and Investments not exactly known; but the last not supposed to exceed £60,000.	San Luis Pŏtŏsī	Dŏlōrĕs Mĕdĕllin, Guădălŭpītŏ, Dŏlōrĕs, Trŏmpētă; Sĕrēnŏ, and Great Adit of La Purisima, at *Catorce*.
	Queretaro	Mine of El Doctor, in the district of that name.
	Mexico	Mines of Santa Ana, Guădălūpĕ, Todos Santos, Santa Clara, and Cinco Señores, at Tĕpāntĭtlān.

AMERICAN COMPANIES.

COMPANY OF BALTIMORE.

Director, Mr. KEATING.

Capital Invested.	State.	Mines and Districts.
Unknown; but very small.	Mexico	Mines of San Jŏsē, San Luis, and Santa Brigida, at Temascaltepec.

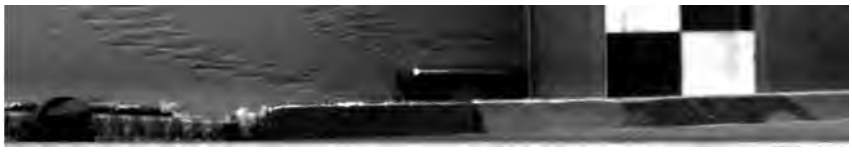
COMPANY OF NEW YORK.

Capital.	State.	Mines.
Unknown; and Investments, if any, very trifling.	Mexico	La Carniceria. Las Animas. La Mina de Aguas. San Juan de las Quebradillas, at Tĕmăscāltĕpēc.

GERMAN COMPANY OF EBERFELD.

Directors, Mr. Stein. Mr. Schleiden. Mr. Von Geroldt.

Capital Invested.	States.	Mines and Districts.
Total Investment about 637,760 dollars, or £127,552.	Mexico	Mines of Ārēvălŏ and Santa Rosa, at *El Chico.* Mine of Santa Rita, at *Zĭmăpān.* Chalma and La Santisima, at San *José del Oro.* Saltillo and San Joaquin, at *El Cărdŏnāl.* Nineteen small Mines at *La Pechuga.* Nine Mines, called De Arriva, at *Temascaltepec.* The Mina Grande, and two others, at *Sŭltĕpēc.* Durazno, Christo, Dolores, and Trinidad, at *El Christo.* El Carmen, La Purisima, and San Atenogenes, at *Angangeo.*



My readers will perceive by this statement, that British Capital, to the amount of nearly Three millions sterling, is actually invested in the Mexican Mines; or has, at least, been expended in enterprises immediately connected with them, as machinery, mining implements and stores, quicksilver, and the salaries of officers employed in the different Companies.

The exact sum disbursed in Mexico, it is impossible for me to state; I should conceive, however, that at least Twelve millions of dollars must have been laid out, at the commencement of 1827, the vivifying influence of which has extended to almost every part of the Federation.*

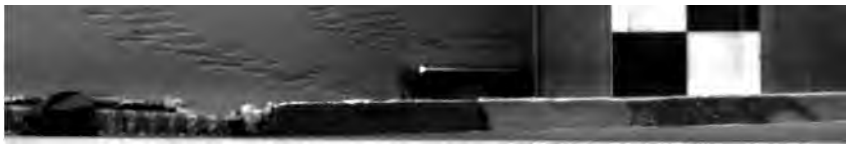
I come now to "the character and extent of the undertakings in which the Companies are engaged,—the difficulties which they have had to encounter;—their progress,—state,—and prospects,—in 1827."

All these points are, in fact, so intimately connected, that they can hardly be considered apart; nor will it, I fear, be possible for me to arrive at any satisfactory conclusion with regard to them, without entering into considerable details; but this I shall do with the less scruple, because it is to the

* I do not mean that bullion to this amount has been imported into Mexico; but that a capital of twelve millions, which would, otherwise, have found its way to Europe, has been retained, and brought into circulation in New Spain, in exchange for the Bills of the different Companies. The imports in Specie on Mining account, have not, I believe, exceeded 300,000 dollars.

supposed failure of those golden dreams, by which the imagination of the public was captivated in 1824, (and to which no small portion of the enthusiasm there displayed in favour of American Independence may, perhaps, be traced,) that that revulsion of feeling, which has since taken place, must be ascribed, as well as the despondency, with which those most interested in American affairs, now look forward to the issue of their several undertakings. For these gloomy forebodings I see, at present, no ground; but if persevered in, they may be attended with circumstances still more injurious to British interests in the New World, than even the errors committed during the period of wild and unbridled speculation, by which they were preceded. I shall endeavour, therefore, by a plain statement of the advantages and disadvantages of the line that has been pursued, to show the nature of the expectations that may still be reasonably entertained with regard to the result.

If I were to take into account nothing but the amount of capital now invested in the mines of Mexico, the average annual produce of these same mines, before the Revolution, and the fact, that those from which by far the largest proportion of this annual produce proceeded, are now worked upon British account,—I should hazard but little in pronouncing the success of all the Companies to be unquestionable. But experience has shown how ill calculations formed on such a basis can stand the



test of those practical difficulties, with which Companies have to contend in the New World; and many a scheme, the issue of which, upon paper, seemed infallible, has proved utterly inapplicable to the American Continent, as soon as the attempt to reduce theory to practice was made upon the opposite side of the Atlantic. It is true that there is nowhere in Mexico that physical impossibility of success, which, at Upsallata, (in Chili,) appears to have put an end to the hopes of the adventurers at once;* but still, the want of a previous knowledge of the country has been severely felt in all the operations of the Companies; and, in more than one instance, has, at least, delayed a result, of which the character of the Mines themselves seems to afford the fairest promise. Upon this point, (the excellence of the Mines,) no doubt can be entertained; for if ever Mining was reduced to a certainty, it was so in Mexico, before the Revolution. There might be fluctuations, indeed, in particular Districts; and capital, if invested without judgment, might then, as now, be lost. But the general produce of the country was the same, during a long series of years; or, if it varied, the variation originated not in the Mines, but in causes totally unconnected with them, which rendered the supply of quicksilver, and other indispensable articles, more or less precarious.

England, even while unconnected with Mexico, always exercised a direct influence upon the produce

* *Vide* Captain Head's Statement.

of her Mines. A war with Great Britain generally caused a reduction of nearly one-third in the Mint Returns; but then the first years of peace brought with them a corresponding increase, so that the *average* was never materially affected. A similar connexion may be traced between the Mining and Agricultural interests. From the enormous quantity of mules, and horses, employed in Mining operations, (14,000 were in daily use in Guănăjūatŏ alone,) a rise in the price of maize occasioned an immediate reduction in all the Mining establishments. The poorer ores were suffered to accumulate in years of scarcity, nor did they become objects of attention, until a succession of plentiful crops again afforded the Mining Proprietors the means of keeping up a sufficiency of live-stock to reduce them with profit. But, notwithstanding these unavoidable drawbacks, a surprising uniformity will be found in the general produce of the country. The failure of one Mine was compensated by the success of others; and thus, a sort of standard was established for the year, which rendered Mining in Mexico almost as sure a mode of investing Capital as any other. The average Produce, (as we have seen,) on a term of Fifteen years, was Twenty-four millions of dollars. What the exact amount of the Capital was, by the investment of which, in Mining operations, this vast sum was produced, it is impossible now to ascertain. I should be inclined, however, to estimate it, at least, at Thirty-six millions

of dollars, or nearly three times the amount of the Capital now employed in the same way by the British Companies. I am bound to state, that for this estimate I can give no authority. It is a mere matter of conjecture; but since I have seen the number of Amalgamation Works, and other extensive and costly establishments, which are now in ruins in every part of Mexico, and compared them with those which have been rebuilt by the Companies, all that they have done, seems to be as nothing, in comparison with what must formerly have existed. I was particularly struck with this on entering Guanajuato, where more money has been expended by the two Companies established there, (the Anglo-Mexican, and the United Mexican,) than upon any other single spot in the Federation; yet the suburb of Marfil, which was formerly, according to Humboldt, "an imposing sight," from the activity that prevailed in every part of it, is now a scene of desolation: and when, after passing a long succession of ruined Haciendas, one at last enters the Town, the population is found to be still reduced to a little more than one half of what it was in the year 1809, when it exceeded 90,000 souls. Without dwelling unnecessarily upon this idea, I will only add that, in as far as my own means of observation have extended, the remark holds good with regard to every Mining District in the Federation. In Zăcătēcăs, Cătōrcĕ, Sōmbrĕrētĕ, and Real del Monte, the works of the Companies are lost amongst the re-

mains of former times; and by what they have expended, some estimate may be formed of what must have been expended before them.

This fact, (the difference between the Capital now invested, and that which it was intended to replace,) is one cause of the disappointment of those, who imagine that, because a very large sum has been laid out upon the Mines of Mexico by British Capitalists, the produce of those Mines ought, at once, to equal that of the best years before the Revolution.

But a still simpler solution of this disappointment may be found in the total ignorance of every thing connected with the New World, under the influence of which most of the Capital, now employed in Mining speculations there, was invested.

In every other commercial enterprise, some previous acquaintance with the subject might have been thought necessary; but the Mines were to be an exception to all ordinary rules; and, on the principle, I suppose, of taking *omne ignotum pro magnifico*, vast sums were embarked in schemes, of which the very persons, who staked their all upon the result, knew literally nothing, except the name.

I am far from wishing to lay unnecessary stress upon this circumstance, but it is essential to a right understanding of the delays that have occurred in the realization of the hopes of those, who sought a profitable investment in the Mines, to state, that the only knowledge which the British Public possessed, three years ago, of Mexico, was derived from a

superficial acquaintance with the Essai Politique of Baron Humboldt; which, although it contains more valuable information than any other similar work, that has ever been given to the world, was, nevertheless, calculated to create an erroneous impression with regard to the actual state of New Spain, by descriptions of a splendour, which had long ceased to exist. No allowances were made for the moral, as well as physical, effects of fourteen years of Civil War;—the dispersion of the most valuable portion of the Mining labourers;—the deterioration of landed property;—the destruction of stock;—and the difficulty of reorganizing a branch of industry so extensive in all its ramifications as Mining, and so dependent upon other branches, not immediately connected with the Mines themselves, and consequently, not under the control of their Directors! All this was to be effected, too, in a country, in many parts of which it was necessary to create a population, before a single step could be taken towards repairing the ruin, which the Revolution had occasioned. And yet, nine-tenths of those who engaged in the arduous task, did so under the conviction that *water* was the only obstacle which they had to overcome, and that the possibility of surmounting this, by the aid of English machinery, was unquestionable! Nor was this all. The errors which Baron Humboldt's scientific eye had detected in parts of the Mining System of Mexico, were supposed to extend to the whole. The practical

experience of the Native Miners was underrated;—their machinery condemned, without any previous inquiry as to its powers, or the different degrees of perfection which it had attained in the different Districts:—*Gradual* improvement was pronounced too sluggish a process; and Cornwall was drained of half its population, in order to substitute an entirely new method, for that which had been endeared to the Mexicans by the experience of three Centuries.

The total failure of this attempt was the natural consequence of the want of consideration with which it was made.

That it *has* failed, (although the fact seems still to be disputed in England,) it is impossible to deny; nor do I believe that, under any circumstances, it could have proved permanently successful.

Englishmen of the lower orders appear to undergo a change, on leaving their own country, (particularly if exposed to the contagion of a large town,) which renders them the most inefficient of human beings: nor is it by an excess of liberality, which only raises them above the sphere in which they were fitted to act, that this evil can be remedied. Indolence, obstinacy and insolence, take, but too soon, the place of those qualities, by which our working classes are distinguished at home; and, as their prejudices are not less strong than those which they have to encounter on the part of the Natives, the result, in all cases where mutual assistance is required, cannot be favourable.

It is but fair to add, that the disinclination of the Mexicans to co-operate in many of the plans suggested, has been not a little increased by the discovery that some of our boasted improvements* have not been productive of any solid advantage, while others have proved complete failures; and where this is the case, it is next to impossible, in any Country, to substitute new methods, merely because they are new, for a practice, which time has already rendered familiar.

Experience has now induced most of the Companies to retrace their steps, and to reduce their Establishments in such a manner as to make the *Management* strictly European, while the operative part is confided to Natives; but this experience has been dearly bought. The Anglo-Mexican Company alone had expended, in September 1826, nearly 30,000*l.* in salaries to men, almost all of whom have now been dismissed; and full 100,000*l.* in Machinery (including duties and carriage from the Coast,) not one twentieth part of which either has been, or ever can be, made use of; the machi-

* I allude not to the use of Machinery where that of the country has proved insufficient, as at Real del Monte; but to the attempt to substitute the Cornish system of washing and dressing Ores, for that of New Spain. In this, as in many supposed improvements in the process of Amalgamation and Smelting, innovation has, hitherto, only led to loss; and I believe that, in every instance, the works for reducing Ores are now confided to Natives.

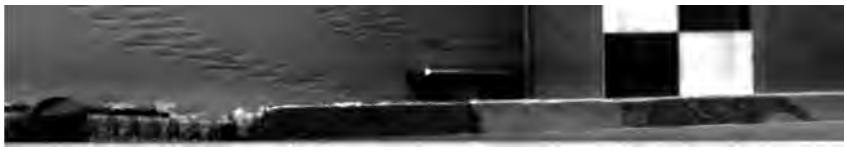
nery of the Country having been found fully adequate for the drainage of their Mines.*

The Expences of the Real del Monte Company, in the same way, have been still greater; but there, the issue of the whole undertaking depends upon the application of the power of Steam, and the Engines render European Workmen of all kinds indispensable. Even there, however, a great reduction is taking place.

The United Mexican Company has likewise dismissed almost all its European Workmen. Indeed, in many instances, the whole management is confided to Natives; and although this system has not, I think, been generally successful, (from the listlessness, and want of activity, of many of the Agents,) in some places it has been productive of the very best effects, as at Sombrerete, where nothing could exceed the beautiful order in which I found the works, under the management of Don Nărcĭsŏ Ănītŭă, who acts, at the same time, as Proprietor, and as Mining Director for the Company.

At Tlalpujahua, the attempt to introduce a strictly European System was never made; and that Company has, consequently, experienced fewer changes, and incurred less expence since its establishment,

* The Mines of Villalpando and Sirena, which are likely to prove the most productive, were drained by Mr. Williamson, in six months, by the application of Malacates, (Horse Whims;) and of the ultimate drainage of Valenciana, by the same process, I entertain little doubt.



than any other. Its whole Outlay does not exceed 180,000*l.* while, by engrafting upon the old Mexican machinery a number of modern European improvements, a steady progress has been made in the works, which now present every prospect of a favourable result.

I have been unavoidably drawn into these details, in order to place in a proper light, strictures, which, although they apply, in some measure, to all the Companies, are not applicable, in the same degree, to each: nor can I terminate this unpleasant portion of my task, without pointing out a few additional circumstances, by which the prospects of the Adventurers in the Mexican Mines have been more or less influenced.

There is hardly a single Company, amongst those now formed, that has not expended considerable sums upon Mines, which, had they been better acquainted with the Country, they would never have attempted to work. This is not to be attributed entirely to the Directors in Mexico. In 1825, the rage for taking up Mining Contracts was such, that many Adventurers, who presented themselves in London for that purpose, disposed of Mines, (the value of which was, to say the least, very questionable,) to the Boards of Management in England, without the Agents of the Company upon the spot having been either consulted, or even apprized of the purchase, until it was concluded. Others were contracted for in Mexico, without

proper inquiry or precaution; and large sums were often paid down for mere pits, which, upon investigation, it was found impossible to work. In some cases, operations were actually commenced, and all the preliminary parts of a Mining Establishment formed, without sufficient data to afford a probability of repayment. In many of the Districts immediately about the Capital, (as Zimapàn, El Doctor, Capula, Chico, Temascaltepec, &c.) this has been the case; and although these desultory experiments have been subsequently abandoned, still, they have been a drain upon the Companies, which is the more to be regretted, because it never could have been productive of any great result.*

In general, the selection of Mines, amongst the first Adventurers, was determined by a reference to Humboldt. Any Mine not mentioned in his

* I do not wish to enumerate the individual instances of these failures that have come to my knowledge, but there is one very generally known, that of Mr. Bullock's Mine at Temascaltepec, which was purchased of him by the Houses of Baring and Lubbock, and upon which I should think that 20,000*l.* must have been expended before their Agent, (Mr. Bullock,) could convince himself of the injudiciousness of his choice. What induced him, in the first instance, to fix upon this particular spot, I am unable to state, for I have never discovered any record, or even tradition, respecting the former produce of the Mine. Certain it is, however, that it does not now contain the slightest vestige of a Vein, nor has one Ounce of Ore, (rich or poor,) been raised from it.

Essai Politique, was rejected as unworthy of attention; while those which were favourably spoken of, were eagerly sought for.

In this respect, the work in question has exercised an influence highly prejudicial to British interests, not from any fault of the author's, but from the conclusions imprudently drawn from the facts which he has recorded.

Humboldt never asserted, or meant to assert, that a Mine, because it was highly productive in 1802, must be equally so in 1824. A general impression of the Mining capabilities of Mexico was all that he wished to convey; and how could he illustrate their importance better, than by presenting statements of what had been done, as the best criterion of what might still be effected, in a country, the Mineral treasures of which he regarded as almost unexplored?

Unfortunately, the consequence of these statements was, to direct the attention of the world *exclusively* to spots, which, from the enormous quantity of Mineral wealth that they have already yielded, may fairly be supposed to have seen their best days.

I do not mean to say that the great Mines, taken up by our Companies, are exhausted; on the contrary, I believe that they will still amply repay the Adventurers for the stake invested in them; but I have, certainly, little doubt that, in many in-

stances, the same Capital might have been laid out, elsewhere, with a much more immediate prospect of advantage.

Besides, however good the Mines, the price which has been paid for their former celebrity in the shape of "Alimentos," (a yearly allowance to their owners,) has proved a very serious addition to the first outlay of the Adventurers.

Those paid by the Real del Monte Company to Count Regla, amount to 20,000 Dollars. The Anglo-Mexican Company, for the Mine of Valenciana alone, pays yearly 24,000 Dollars. On the preparations for draining the first, (the great Biscaina Vein,) nearly two millions of Dollars had been expended when I left Mexico; and at Guanajuato, the Valenciana Mine had cost, on the 1st of September, 1826,—672,264 Dollars. Farther advances will be required in both cases, before the drainage can be completed; and certainly, there ought not, in reason, or justice, to have been any surcharge, in the shape of Alimentos, where so large an investment of Capital was necessary for the preliminary works.

But this was one of the effects of that competition between the different Companies, which made each fear to find a rival in the rest: another, was the little attention paid to the terms of the Contracts, which are not always as favourable as they might have been made. Some of the most expen-

sive Mines, (as Valenciana, and Rayas,) are held for a shorter term of years than would have been desirable; and in others, many onerous conditions have been introduced, which nothing but the extreme eagerness of the first Adventurers to take up the greatest possible number of Mines, could have given rise to. Fortunately, these disadvantages are pretty equally distributed; so that, in most Companies, the good and the bad Contracts serve to counterbalance each other: I do not, however, know any one, whose engagements are unexceptionable, or by any means as good as they might now be made.

Such are the disadvantages under which the British Companies, now established in Mexico, labour, and such the causes that have, hitherto, impeded their progress. Both have proceeded, in a great measure, from the want of a proper knowledge of the country, in the first instance, which has, undoubtedly, entailed upon them an expenditure, which, by a more judicious system on commencing their operations, might have been much diminished.

Against these drawbacks we must set, First, The known goodness of a great proportion of the Mines now in the possession of the Companies; and the equally well known fact, that, when these Mines stopped working, there was no falling off or diminution in their produce; so that as soon as the pre-

sent Adventurers reach the lower levels, they have almost a certainty of being repaid for a part, at least, of their advances.*

Secondly, The great progress that has been already made by all the Companies: the forward state of their preparatory works; and the rapidity with which, after making roads, rebuilding Haciendas, and laying in stores of all kinds, they are now approaching the lower workings of their different Mines, where the demand for farther advances, on the part of the Shareholders, will cease.

Thirdly, The certainty, that errors once committed, will not be repeated; that every precaution is now taken in order to confine the operations of the Companies to those Mines from which speedy returns may be expected; that the greatest activity is displayed in every one of the negotiations; and that this activity is rendered doubly efficient by the lessons of the last three years.

My own experience enables me to add that, in Mexico, there has been no instance of any of those disgraceful speculations which have contributed so much to discredit, in England, Mining Adventures

* I cannot urge this point too strongly, for although the mass of silver already raised from some mines, undoubtedly diminishes the probability of their continuing equally productive for a long term of years, yet, where the richness of the Vein continued unimpaired in 1810, it affords almost a certainty of the repayment of the Capital invested, in the first instance, leaving the profits only to be affected by the ulterior returns.

in general. The engagements of the different Companies are all *bonâ fide* engagements, and no exertions have been spared in carrying them into effect. The efforts which have been made in the service of some of the Associations, and the obstacles that have been surmounted, are quite incredible, and do the highest honour to the gentlemen charged with the direction of their affairs: and, though some of the minor undertakings, in which Capital was, (perhaps injudiciously,) invested, at a time when a desire to employ Capital in this way was universal, have since been given up, still, the great enterprises which were pointed out, in the first instance, as the object of the formation of the different Companies, have been steadily pursued, and are now in a very advanced state.

Those who are unacquainted with the scale upon which Mining enterprises in Mexico are conducted, and who judge of the outlay required there, by a comparison with that which attends the working of one of the smaller Mineral deposits of Europe, are at a loss to comprehend the necessity of an expenditure so large as that of some of the Companies has already been: I shall, therefore, take the liberty of submitting to my readers the following observations, which will be found, more or less, applicable to all the Mining Associations of New Spain, and may tend to throw some light upon this part of the subject.

The Outlay of the Companies has not, in any

instance, been confined to a single Mine, but has embraced a series, or suite of Mines, sometimes in the same, sometimes in different districts, each requiring a multiplicity of extensive works, not only in the interior, for the drainage and extraction of ores, but on the surface, in order to turn to account these ores, when raised.

It is in the immense mass of ores which they are capable of producing, and not by any means in the abundance of Silver contained in them, that the riches of the Southern, or Central mining districts of Mexico, consist. Before the Revolution, it was calculated that the three millions of marcs of silver, to which the average annual produce of the country amounted, were extracted from ten millions of quintals (hundred weights) of Ore; so that the proportion of Silver did not exceed two and a half ounces to the hundred weight.*

The quantity of machinery requisite, in order to reduce this mass into a fit state to be submitted to the action of the quicksilver, by which the silver is ultimately separated from it, was immense; and as the whole of it was destroyed during the Civil War, it became necessary to erect anew, horse-whims, (Malacates,) magazines, stamps, crushing-mills, (Arastres,) and washing-vats; to purchase hundreds of horses for the drainage, and mules for the conveyance of the ore from the mine to the Haciendas,

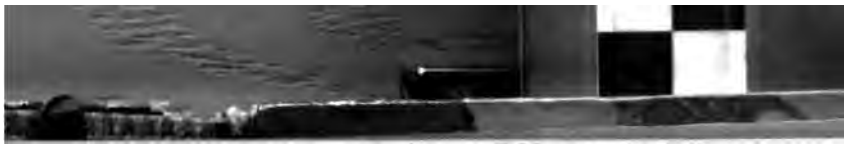
* *Vide* Report of Tribunal de Mineria, and Humboldt, *passim.*

(where the process of reduction is carried on;) to make roads, in order to facilitate the communication between them; to wall in the Patios, or courts, in which amalgamation is at last effected; and to construct water-wheels wherever water power could be applied; nor is there one of these expences, that is not in so far indispensable, that, without them, the drainage of the mines themselves could lead to no sort of advantage.

It is, therefore, by works of this nature that the Companies have commenced their operations, and in them the largest portion of their outlay has consisted. Authorised by their contracts to look forward to a long term of possession, (generally from twenty to thirty years,) and entitled, by the former goodness of the mines, to expect an abundant produce, their preparatory works have been constructed in such a manner as to combine durability with convenience, and, in most instances, will require but few additions. Of the scale upon which things have necessarily been done, I shall beg leave to adduce a few examples.

The possessions of the Real del Monte Company, on the two great Veins of the Santa Brigida, and La Biscaina, (which are usually regarded in England as one *mine*,) cover a space of 11,800 yards, and are intersected, at intervals, by thirty-three shafts, varying in depth from 200 to 270 yards, but all sunk with a magnificence unparalleled in Europe. The whole of these shafts, together with the great

adit, which follows the direction of the two veins, branching off from the Santa Brigida Vein at the point where it intersects that of the Biscaina, and from which the wealth of the Regla family was principally derived, were delivered over to the Company, in July 1824, in a state of absolute ruin. Many of the shafts had fallen in, (though cut, at intervals, in the solid porphyritic rock;) in others, the timbers had given way, and in all, as the adit was completely choked up, the water had risen to an enormous height. In July 1826, when I visited Real del Monte, the adit was cleared, and retimbered, from the mouth, (near the mine of Mŏrān,) to the shaft of Dolores, (a distance of 2,807 yards;) seven of the great shafts on the Biscaina Vein, and two on that of Santa Brigida, were repaired down to the adit level, (213 varas,) forming in all a space of 12,439 feet, that had been retimbered, and 5,921 feet that had been actually dug out anew, in order to free it from rubbish, in the course of two years. 45,400 yards of road were likewise made during the same time, by which a communication for waggons was opened from the different shafts to the farms in the mountains, as well as to the great Hacienda of Regla, between which and the mines, six hundred mules were formerly employed daily in the conveyance of Ores. At all the principal shafts buildings were erected, with magazines, and workshops for carpenters and smiths, inclosed by lofty stone walls. At Regla, a thirty-six feet water-wheel had been



made, and a wheel-pit built for its reception. Eight of the old arastres, (worked by water,) had been repaired; dwelling-houses for miners built; smelting furnaces erected; stabling completed for 500 mules and horses; and every preparation made for putting the whole establishment into activity, the instant that the drainage of the mines could be effected.

To accomplish this, five large steam-engines, (three of Woolf's, and two of Taylor's,) together with one steam stamping-engine, and two small saw mill-engines, amounting in all to 1500 tons of machinery, were sent out from England; all of which, at the period of my visit, had been safely transported from the coast to Real del Monte, by the party under the orders of Captain Colquhoun, whose exertions in this most arduous enterprise, had they been made in the field, instead of having occurred in the service of a private Association, would have excited both the surprise and the gratitude of his country. Seven hundred mules were employed, during five months, upon this great work, with from seventy to one hundred men; without including those who had been previously occupied in repairing such parts of the road between Veracruz and Perote, as must have proved impassable for loaded waggons.

Nothing could be more honourable to the director, Captain Vetch, than the flourishing state of the establishment at the period of my visit; nor do I think that the most timorous of the shareholders would

have murmured at the expence, had they seen the ability with which the whole plan had been traced, and witnessed all that two years had enabled their agents to effect.

At Bolaños, (which, though a distinct company, was likewise under the direction of Captain Vetch,) the expences have been confined, almost entirely, to the preparations for the drainage, which consist of one great work, designed by Captain Vetch, and executed hitherto under his superintendence. The Company possesses there fourteen shafts, communicating with each other below ground, and occupying a space of 4,100 yards upon the vein.

The mines, though peculiarly rich, were abandoned in 1798, from the enormous expence of keeping down the water, in which, at that time, 5,000 mules were employed. As a substitute for these, a single water-wheel is now to be erected; it having been ascertained, by repeated measurements, that a sufficient fall may be obtained to work this wheel, by bringing a canal, or leat, from the river, which runs through the barranca, (ravine,) in which the mines are situated, at a considerable distance up its course.

The length of this canal is 6,176 yards, or three miles and a half, of which 3,034 yards, (or nearly one mile and three-quarters,) must necessarily be carried under ground, by excavating a tunnel.

In 1826, 1,943 yards of the open cutting, and 1,629 yards of the tunnel, were completed, (four feet deep and six wide;) in addition to which, ten

lumbreras, (or air shafts,) had been sunk, the aggregate depth of which was 180 yards. 1,309 yards more were driven before the 1st of February, 1827, which left only 450 yards to be completed.

The whole is regarded by the natives as a most judicious, and scientific work, which well deserves to be repaid by the success, which those acquainted with the district confidently predict.

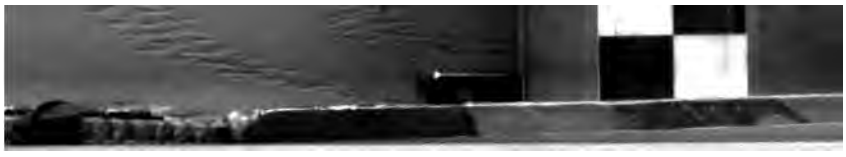
The works of the Anglo-Mexican Company, comprise twenty mines in the district of Guănăjūatŏ alone; three in that of San Crĭstōbăl; two at Măcŏnī; five at Zĭmăpān; three at Cătōrcĕ, and six at Real del Monte. Of the Guanajuato mines, some are upon an enormous scale, as Văl ĕncĭană, Mĕlladŏ, Tĕpĕyac, Sĭrēnă, and Vĭllălpāndŏ, all of which were delivered to the Company, in February 1825, in a state of complete ruin.

When I saw them, in November 1826, the machinery, and works connected with them, had been entirely rebuilt; the drainage in Sĭrenă, and Vĭllălpāndo, was nearly concluded, and in the Valenciana it was proceeding at the rate of 10,000 tons per week. Nine Haciendas de beneficio, (amalgamation works,) had been erected, and completely fitted up, with crushing-mills, and every other necessary. In most of these, the process of reducing ores was carrying on to a considerable extent: some were still idle, but the progress of the drainage in the Valenciana, and Villalpando, was expected very shortly to furnish a sufficiency of ores to bring them all into

activity. The number of mules and horses employed in the drainage was 3,100; in addition to which there were about 400 more used merely in the conveyance of ores from the mines. The weekly expences of the Valenciana mine alone, which is regarded as the principal undertaking of the Company, were about 1,200*l.*; the whole outlay upon it, in September 1826, was 134,452*l.*: but then the produce of the Valenciana, from 1788 to 1810, when the works were stopped by the Revolution, *averaged* 1,446,067 dollars (or 289,213*l.*) per annum; so that the investment is by no means disproportioned to the extent and importance of the object in view.

What I have stated, with regard to the three Companies already mentioned, is applicable to all the rest.

The outlay of the United Mexican Company is distributed amongst the principal mines of most of the principal districts, in all of which the preliminary works have been brought nearly to a conclusion, Haciendas built, and the necessary preparations made, at a very great expence, for carrying on operations upon a large scale. On the great mine of Rayas alone nearly 100,000*l.* have been expended. On the Veins of El Păvĕllōn, and La Veta Negra, at Sōmbrĕrētĕ, at least an equal sum has been employed; as much more has been sunk in the mines of San Ăcāsĭŏ and San Bĕrnăbē, at Zăcătēcăs; but all these are undertakings of great promise, and upon so large a scale, that success, in any one, would repay



the outlay upon the whole in the course of a few years.

At Tlālpŭjāhuă, the Company which bears that name is in possession of eighty-six mines, the very position of many of which, in 1825, it was difficult to ascertain, from the length of time which had elapsed since they had been abandoned; none of these mines is upon a very large scale, but, from their being so numerous, a multiplicity of works have been required, all of which have been executed with the greatest activity and talent. These works extend over a surface of 21,260 yards, comprised in the 106$\frac{1}{10}$ Pertinencias, which belong to the Company. Thirty-nine mines were in work early in 1826; in addition to which three Haciendas had been built; a large stock of mules and horses purchased for drainage, (about 2000,) and such encouragement given to workmen, that, in lieu of 150 men, (no more could be obtained at first,) 2,300 labourers were in daily employment at the time of my last visit, (in January 1827,) by whose united efforts the appearance of the place had been entirely changed, and a flourishing town created, where, two years before, nothing but ruined houses were to be seen.

It is to be regretted that the sudden change of feeling, which took place in England, with regard to Mining adventurers in general, should have compelled the directors of the Tlālpŭjāhuă Company to suspend the execution of one of the most mag-

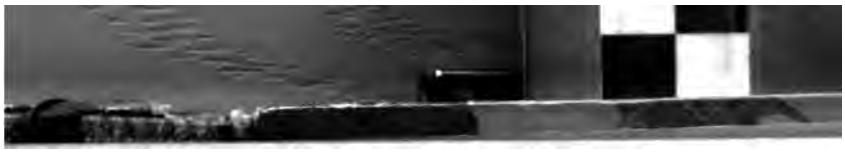
nificent mining works that has yet been planned in Mexico; the execution of which, although attended with considerable expence at the outset, would have proved highly advantageous to the interests of the shareholders, had proper provision been made for its completion. The mines of Tlalpujahua, having been worked at a time when the science of mining was in its infancy in Mexico, cannot be drained by machinery without a very considerable expence; it having been found necessary, in many instances, to begin by enlarging the shafts, in order to allow of the application of the larger horse-whims, (Malacates,) used in other districts. To remedy this inconvenience, as well as to obviate the disadvantages with which drainage, by a multiplicity of small adits unconnected with each other, could not fail to be attended, it was in contemplation to drain all the principal mines at once, by the construction of one immense adit, (*Galerie d'écoulement*,) for which the local peculiarities of the district seemed to offer extraordinary facilities. The ground was surveyed by the principal Engineer of the Company, Mr. Moro; and the opinion of the Director, (Mr. Rivafinoli,) with regard to the utility of the projected work, coinciding entirely with that of the Head Miner, (Mr. Burkart,) of whose indefatigable exertions it is impossible to speak too highly,—the line for this stupendous gallery was traced, and the work itself commenced early in 1826.

The whole length of this adit, from its mouth, which is situated in the valley of Tepetongo, about a league from Tlalpujahua, to the point at which it intersects the great Coronas Vein, will be 5,176 yards. At 4976 yards it cuts the Vein of La Borda, upon which some of the most promising mines of the Company are situated; and, in both instances, a depth of 132 yards below the deepest of the old workings will be obtained. The Gallery is two yards wide, and three and a half high, being constructed in such a manner as to allow of the use of small carts. In order to facilitate its construction, twelve lumbreras, (air-shafts, *puits d'airage*,) have been opened, at intervals of from 350 to 450 yards from each other; and from each of these, again, two galleries extend to the right and left upon the line of the adit, so as to admit of the greatest possible number of workmen being employed at the same time. The depth of the twelfth of these air-shafts, which is the deepest, is 300 yards: the first is only sixty-three yards deep; but the aggregate depth of all amounts to 2,332 yards. It is in this that the great expence of the undertaking consists, as well as its difficulty. The aggregate depth of the air-shafts constructed for the Tunnel at Bolaños, is only 180 yards; and the tunnel itself, being merely a water course, is upon a much smaller scale than the Tlalpujahua adit, (four feet deep, by six wide).

There can be no doubt, however, that both Mr. Burkart, and Mr. Moro, are perfectly competent to carry through the undertaking in which they have engaged, provided they are supported by the Shareholders at home; and every one at all acquainted with mining must perceive the immense advantages which would result from it to the Adventurers, as, in all their principal mines, it would ensure both the drainage, and the extraction of Ores, for the space of 132 yards of virgin ground, without the expence of machinery above; which requires not only a permanent investment of capital, but frequent additions, for repairs, as well as for keeping up the supply of animals, by which it must be worked.

In the Autumn of 1826, fifty yards of the great Gallery had been driven, (from the mouth,) and the air-shafts, Nos. 1, 2, 3, 10, 11, and 12, commenced. Some of these had already attained a considerable depth, but the panic of the Shareholders in England has, I believe, rendered the farther progress of the work extremely slow.

The time which has been consumed in the undertakings, which I have described in the preceding pages, is not more than might have been foreseen, had the nature of the enterprise been inquired into beforehand. The capital required might, undoubtedly, have been less; under better management; but still, it has effected what it was intended to effect, and it has purchased, besides, a stock of experience,



which the Companies may turn to great account in their future operations.

Under these circumstances, to allow discouragement to rob them of the fruits of their labours, at the very moment when they are almost within their reach, would be both melancholy, and absurd.

It was, however, a *dénouement*, to which the sudden revulsion of feeling, that took place in England in 1826, was very near leading. Had the despondency occasioned by that period of distress continued, the whole advantage of what has been done would have reverted to the Mexicans alone; for such is the present state of the mines, that the proprietors would easily have found funds to carry on the works, if abandoned by the Companies, and *intended*, in almost every instance, to do so.

Fortunately, confidence has been, in some measure, restored; and, notwithstanding the serious consequences with which the errors of the first six months must be attended, (consequences, which I have not attempted either to palliate, or to disguise,) it is in my firm conviction that, with a little perseverance, the result of the different enterprises now carrying on with British Capital, will be productive both of adequate returns to the Adventurers, and of permanent advantage to their Country.

To what extent these returns may be expected to go, and what the advantages are, which both England and Mexico will derive from them, it will be the object of the next Sections to inquire.

SECTION III.

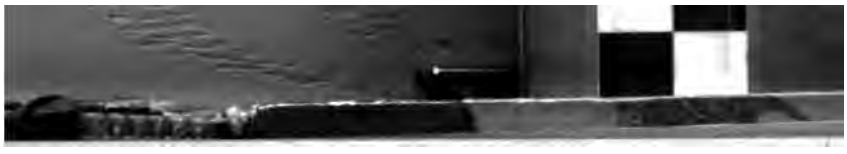
WHETHER THE LARGE CAPITALS WHICH HAVE BEEN REMITTED TO MEXICO, AND INVESTED IN THE MINES BY BRITISH SUBJECTS, AND ON BRITISH ACCOUNT, ARE LIKELY TO BE PRODUCTIVE OF ADEQUATE RETURNS TO THE ADVENTURERS; AND WITHIN WHAT PERIOD IT MAY REASONABLY BE EXPECTED THAT THESE RETURNS WILL BECOME SUFFICIENTLY CONSIDERABLE, TO MAKE THE GENERAL PRODUCE OF THE COUNTRY AGAIN EQUAL, OR ULTIMATELY EXCEED, THE ANNUAL AVERAGE AMOUNT DERIVED FROM THE MINES BEFORE 1810.

It will be seen that this Section embraces two distinct subjects of inquiry:—

1st. The returns likely to be made by the different Companies to the Adventurers engaged in them; and,

2ndly. The probability of the general produce of the country being so increased by these returns, (or by any other causes,) as to equal, or ultimately to exceed, the average annual produce before the year 1810.

With regard to the first of these points, I shall submit to my readers the opinions of such of the Directors of the different Companies as have rem-



tured to enter upon this part of the subject in their communications with me, (which some, from a very natural disinclination to commit themselves, did not,) and state, succinctly, in how far these opinions coincide with my own:—Upon the second point, I shall hazard a calculation myself, founded upon the general tenour of the information, which I have been labouring, during the last two years, to collect. I must, however, premise, that the data, upon which any such calculation must be founded, in the present state of Mexico, are too scanty to admit of the possibility of arriving at any exact result; while success, even where facts are not wanting to guide us in our investigations, and where every thing seems to indicate its probability, is always liable to be retarded by those causes, which I have pointed out in the preceding Section, as exercising a general influence upon the Mining Interests of New Spain, and, consequently, as more or less closely identified with the prospects of the present Adventurers.

No powers of machinery, for instance,—no exertions, or combinations of private ingenuity, could counterbalance the effects of several successive years of scarcity, or afford security amidst the desolation of a second Civil War.

The mines, at the same time that they are the great source of the prosperity of Mexico, are the first to feel any event by which that prosperity is menaced. Like the funds in Europe, they always indicate the approach of a storm, and require security,

as well as a concurrence of other favourable circumstances, in order to reach their natural level. Every calculation respecting them must, therefore, take as its basis the supposition, that public tranquillity will not be disturbed, nor the ordinary course of nature interrupted by any unusual visitation, (such as pestilence or famine,) with which the New World is occasionally afflicted. It is upon this supposition, that the gentlemen, of whose authority I shall presently avail myself, have proceeded in their communications with me; and it is upon a similar understanding alone, that I can venture, in justice to them, or to myself, to lay before my readers the result of our joint inquiries. I trust, however, that due weight will be given to this observation, and I shall consequently proceed, at once, with my task; not with a wish to encourage delusive hopes, but merely in order to show the nature of the expectations that may reasonably be entertained by those who have embarked so large a stake in the mines of New Spain.

"Captain Vetch, the Director of the Real del Monte Mining Association, in a Report dated the 20th September, 1826, after stating the produce of the mines of Count Regla, during the fifty years in which they were in full activity, to have been 'Twenty-six millions and a half of dollars,* calculates that, by working the two great veins, (La Biscaina and Santa

* Average 530,000 dollars per annum.

Brigida,) at once, (which was never the case before,) the Company may expect to derive from them a yearly return of one million and a half of dollars:— He adds another million for the other mines belonging to the Company on the Veins of Mŏrān, Ăçōstă, Săn Estĕvăn, &c., in the same district; and at Pĕchūgă, Zĭmăpān, and Ŏzūmătlān; and declares his expectation, "that the mines, in the course of the year 1827, will cover their own expences, and that, in 1828, the produce will be Two millions of dollars; fully equalling, if not surpassing, the annual average amount derived from them before the year 1810."

In a second Report, dated 16th March, 1827, Captain Vetch confesses that delays have occurred in the completion of the preparatory works, which will, in all probability, render some farther advances on the part of the Company necessary during the year 1827; but he does not modify his opinion with regard to the prospects of the Adventurers in any other respect, and appears to consider success in the years 1828, and 1829, as certain.

The same gentleman, in his capacity of Director of the Bolaños Company, estimates the probable annual produce of the mines of Bolaños, after the year 1828, (the whole of which will be occupied with the drainage,) at, two millions of dollars, (Report of 1st October, 1826;) and he adds in a subsequent Report, (of 16th March, 1827,) that he sees no reason to change his opinion either with regard to the mines, or the time at which they may be expected to be-

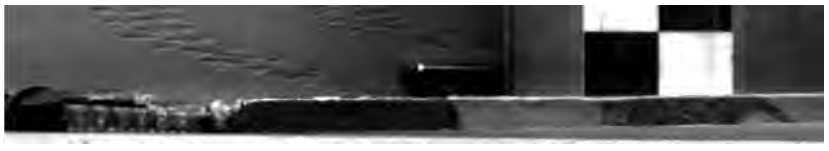
come productive, as he is borne out in all that he had stated in his former report, by the rapidity with which the works, by which the drainage is to be effected, were advancing towards their conclusion.

Without adopting implicitly these calculations, I am bound to state that they are made by a gentleman of undoubted ability, and that the works, by which they are to be realized, have been carried on by him with the greatest science and activity.

I confess, however, that Captain Vetch's expectations, with regard to Real del Monte, are more sanguine than my own, because his estimate of the probable produce considerably exceeds the average registered amount of former times.

He, however, justifies his calculation, with regard to the Biscaina vein, (the most important of all,) by stating that it is founded upon the produce of its best years, (from 1794 to 1801,) when it yielded six millions of dollars; and that it is not assuming too much to say that, with improved machinery, and an improved system of working, it may again be brought to the same standard, as soon as the deeper levels are reached; in which it is universally admitted that the richest ores were found, although, from the difficulty of keeping them free from water without steam-engines, they were ultimately abandoned.

Should these expectations be realized, and the produce of the year 1829 amount to Two millions of dollars, deducting one million for the expence of keeping up the establishment, the whole outlay of



the Company, (400,000*l.*,) would be repaid in 1830; after which period, they would, as long as the mines continued to yield ores in the same ratio, after dividing the profits with the proprietor, receive an interest of 750,000 dollars, (or about thirty-four per cent.) upon a nominal capital, of the use of which they would have been deprived for only five years.

Reduce these profits to twenty-five, or twenty per cent., during the term for which the mines are contracted, and they will still be enormous; although not at all equal to those which Captain Vetch expects to derive from Bolaños, where, by the investment of 150,000*l.*, (or 750,000 dollars,) commencing in the year 1826, he looks for a produce of Two millions of dollars in the year 1829.

This estimate is a fair one, as it does not exceed one half of the produce of some former years, before the expence of the drainage compelled the proprietors to abandon the deepest levels.*

Half the sum, (supposing the other half to be absorbed by the expences,) would repay the whole capital invested, in the year 1829; and leave one million of dollars annually, to be divided by the proprietors in every subsequent year; so that the profits of the Company, as long as the mines continued to be productive, would be equivalent to two-thirds of their whole original expenditure, or something more than sixty-six per cent.

* *Vide* Table of Produce, No. 1, at the end of this Section.

Under such circumstances, loss, at all events, either of capital, or of a return upon it, much exceeding any ordinary interest, can hardly be apprehended; for, although mining cannot be subjected to fixed calculations, it is a fact universally admitted in Mexico, that the chances of loss diminish, in proportion to the extent of the operations carried on; and that, although many a poor miner has lost his little all upon one ill-chosen spot, few instances have occurred, in which a district of known richness has disappointed the hopes of those who have possessed the means of exploring it in every part.

The Report of Mr. Williamson, Director of the Anglo-Mexican Association, (dated June 1826,) after stating the progress made, and the probability of concluding the drainage of the Valenciana mine in eighteen months, proceeds to give the average annual produce of Guanajuato before 1810,* which appears to have been, on a term of fifteen years, 5,572,206 dollars; two-thirds of which, or 3,714,804 dollars, actually proceeded from the mines now working by the Company.

Mr. Williamson expects, that in two years, (i. e. in 1829,) he shall be enabled to bring the produce of the mines again to this standard; nor do I see any reason to question the possibility of his doing so, now that the reductions mentioned in the pre-

* Vide Table, No. 7, annexed to preceding Section.

ceding Section have placed the establishment on a footing, at once economical and effective. He deducts one half of the produce for expences, which leaves 1,857,402 dollars, to repay the Adventurers for their advances, which is to be done before any division of profits with the Mexican proprietors takes place, and might, consequently, be effected in four years from the present time; (the outlay being three and a half millions, and the mines covering now their own expences:) and he then takes half that sum again, (or 928,701 dollars,) as the interest to be paid, or rather the profits to be derived from the speculation during the duration of the contracts, if the mines do not prove totally unworthy of their former reputation.

This calculation, like all others upon the same subject, is open to objections. Delays may occur, and the most reasonable hopes may be disappointed; but it has for its basis the records of what has been, and it assumes nothing but the possibility of restoring things to what they were, before a great political convulsion compelled the owners of the most flourishing mines to abandon their works.

To the activity and judgment which were displayed, at the time of my visit to Guanajuato, in the operations by which the result, to which Mr. Williamson looks, was to be produced, I can myself bear witness; and, in the opinion of the natives, such was the progress already made, that a Barr, or share, in the Valenciana, which, in 1825, was not

valued at more than 80,000 dollars, was, in 1826, reckoned worth 100,000.

I may add, that from August 1826, up to the time of my departure from Mexico, (May 1827,) the mines covered their own expences; and that, during the month of March alone, (1827,) the silver reduced in the Haciendas of the Company amounted to 54,964 dollars.*

The want of Records of former produce has prevented Mr. de Rivafinoli, the Director of the Tlalpujahua Company, from hazarding any calculation, as to the probable amount of the produce of the mines belonging to that Association.

He stated, however, in a Report, dated September 1826, that, from the 1st of January 1827, he expected to be enabled to cover his expences, and to pay an interest of ten per cent. upon the capital invested, which only amounted then to 160,000*l.*

These hopes have not been realized up to the present moment, accidental delays having occurred, as in every other Association; but, from the forward state of all the preparatory works, the admirable system which has been introduced at Tlalpujahua, and the great promise of some of the ores that have been raised, I am inclined to think that the year 1828 will not elapse without Mr. Riva-

* I have no returns of the former produce of any of the mines worked by the Anglo-Mexican Association, with the exception of the Valencians, which will be found in Tables Nos. 2 and 3.

finch's expectations being fulfilled; while I see great reason to hope that, during the two subsequent years of 1829 and 1830, a large portion of the capital invested will be repaid.

The Directors of the "Mexican Mining Company," having neither given to the world a statement of the amount of the capital laid out by them, nor published any documents with regard to the former produce of their mines, I can make no calculation whatever as to the amount which may be expected to be derived from them. The Directors, however, stated, in their communications with me, that, both at Sumoloacan, (near Perote,) and in Oaxaca, the mines actually working by the Company were in full produce: that, at the first place, they considered the quantity of ore on hand as fully equal to the expenditure; and that, although this was not yet the case in Oaxaca, the mines there had yielded, up to the end of December 1826, twenty-six bars of Silver, worth, (including a small Ley de Oro) about 30,000 dollars.

The disorganization of the Catorce Company, occasioned by the failure of the House of Goldschmidt, prevented their Directors from favouring me with any report. I was, however, enabled to ascertain, during my journey North, that their outlay at Catorce did not exceed from Thirty to Forty thousand pounds. Fifty thousand pounds more are required, and two years' time, to complete the principal work which they have undertaken there;

but, if they can raise funds to carry it on, there is no mining enterprise in the country of which the Mexicans have so high an opinion; and I should myself be inclined to estimate their probable profits, for some years, at from sixty to seventy per cent. upon their advances.

The former produce of Catorce, during its best years was 2,854,000 dollars, (the average on five years, from 1800 to 1804). The mines from which by far the largest proportion of this sum proceeded, are now unworked, and must remain so, until the great Adit, the contract for which the Catorce Company has taken up, be concluded.

There is, however, every probability that, if carried on, the annual produce would equal that of the most flourishing periods before the Revolution; the riches of the vein having continued undiminished, at the time when the increase of the water obliged the proprietors to abandon the works.

Mr. Alaman, the principal director of the United Mexican Company, in a Report full of curious information, which he had the goodness to draw up for me, declined hazarding any positive calculation as to the probable amount of the produce of the mines worked by that Association, "because, (to use his own words,) "the produce of a mine could never be said to bear any exact proportion to the capital invested in it; sometimes exceeding all reasonable expectations, and at others, falling short of the most moderate estimate, particularly when confined to any given time."

Mr. Alaman stated, however, that "as the large capital of the Company enabled it to work a number of districts at one and the same time, the probability of great profits increased in proportion to the number of mines capable of producing them;" and he adds, "that, if the past can be taken as a criterion for the future, *many* of the mines worked by the United Mexican Association, (as El Pavellon, at Sombrerete; San Bernabé, or San Acasio, at Zacatecas, and Rayas, at Guanajuato,) were capable of covering, in a very few years, the whole outlay of the Adventurers;" (although that outlay amounted, at the close of 1827, to 800,000*l.*;) "without reckoning many other mines, in the possession of the Company, celebrated for their former riches, or the new mines of Sēchō and Lŏrētŏ, which had already repaid the advances made upon them, and were producing profits."

In another part of his report, Mr. Alaman stated, that in almost all the districts the preparatory works were nearly concluded; and that, with the exception of the two great mines of Rayas and San Acasio, in the course of the present year, (1828,) all the mines of the Company would be in full produce. For the two exceptions, he fixed, as the maximum of time required, the autumn of 1828, so that in 1829 the Adventurers may hope to reap the full fruits of their present advances. If any faith can be placed in Mining calculations at all, these fruits must be very considerable; for the United Mexican Company possesses, perhaps, a

larger portion than any other, of the mines most celebrated for their former riches, and that on terms sufficiently equitable. I, therefore, rate their prospects high. But, at the same time, it must be confessed, that the vast extent of their undertakings is a disadvantage, from the impossibility of enforcing uniformity of system in operations, which are spread over 800 leagues of country, (from Jesus Maria, North-west of Chihuahua, to Teojomulco, in Oaxaca,) and that, consequently, there is reason to fear that the difficulties of management will tend, whatever be the exertions of the directors, considerably to diminish the profits.

It would be folly in me to attempt to fix what Mr. Alaman has declared his inability to do,—the period at which the Company may look for the repayment of its advances; but should any one of their great undertakings succeed, (and it is difficult for the most desponding to suppose them all failures,) that period cannot be more distant than that fixed by the Directors of other Companies—viz. the year 1831 or 1832.

The Report with which the Directors of the German Company were so obliging as to furnish me, contains many interesting facts, some of which tend not a little to confirm the opinion, which I have expressed in the preceding Section, that, had the attention of the British public not been exclusively directed to the mines which came recommended by Baron Humboldt's authority, capital might have been, in

many instances, invested more profitably, in mines of less celebrity, but easier of access, than some of those which have been selected by the English Companies.

"Not one of the German mines is known in England; for Arevalo, the most important one amongst them, (at Chico,) was discovered after Humboldt's visit to Mexico; yet the Germans, by a judicious selection, made upon the spot, by miners of great experience, and activity, have done more, (in proportion,) in less time, and with a smaller capital, than any of the Foreign Companies established in New Spain.

"By the statement of the Directors, it appears that they commenced their operations in the Autumn of 1825; and that, at the end of December 1826, they had drawn from the very small proportion of mines, which they had been able, at that time, to bring into work, a sum nearly equal to one-fourth of the capital employed.

"The whole outlay of the Company, including the transport of the directors and officers from Germany, amounted to 637,760 dollars; while the produce was 147,153 dollars: a result sufficiently favourable to render any farther calculations as to the ultimate success of the Company unnecessary. That success, however, will not be so rapid as might be expected, unless the capital of the Association (originally 500,000 dollars) be increased, so as to enable its agents to bring the mines taken up by

them at once into activity, instead of adopting the slow process of applying the profits of the one to the wants of the rest.

With regard to former produce, the mine of Arevalo, at Chico, is stated to have paid the King's tenth upon five millions of dollars, from 1804 to 1824; or to have averaged 250,000 dollars per annum.

The mines at Real de Arriba, in the district of Temascaltepec, produced, weekly, twelve bars, or 13,000 dollars, (yearly, about 600,000 dollars). Sta Rita, (at Zimapan,) upon the years 1791, 1792, and 1793, left a profit of 100,000 dollars: and the richness of the Gold mines at San José del Oro, led, in former times, to the appointment of a Receiver-general for the King's fifth in that district alone. The present state of the mines there, however, does not appear to warrant any immediate expectations of success.

On the whole, should the undertakings of the Company be prosecuted with vigour, the annual produce, at the lowest possible estimate, may be taken at 600,000 dollars in the year 1830; with a probability of its considerably exceeding that sum; as Ărĕvălŏ alone, in the opinion of all the miners whom I have consulted, (both natives and foreigners,) is capable, at the present moment, of producing seven bars weekly, or 365,000 dollars per annum, could a sufficient number of workmen be procured for the extraction of the Ore.

Of the two American Companies mentioned in the sketch, (those of Baltimore and New York,) I can say little, except that the first only has effected an establishment in Mexico. The mines to be worked by both are situated at Temascaltepec, (about thirty leagues from the Capital,) and the works are conducted with great economy and activity, by Mr. Keating, a distinguished mineralogist of the United States.

With regard to the result, I have been informed that, from the tables of former produce, during a long series of years, there is reason to hope that the mines may pay an interest of from nine to fifteen per cent. upon the capital invested, which does not exceed 100,000 dollars. The completion of the works will, probably, be effected in the course of the year 1828.

The preceding pages contain the only data, upon which a calculation "of the returns likely to be made to the Adventurers by the Companies now established in Mexico," can, at present, be attempted. The result is by no means such as I could have wished, as it is founded upon conjectural evidence, and amounts, at best, to nothing more than probability; but I have no hesitation in adding that I regard this probability as strong, and that, after a very careful investigation, I see little reason to consider the expectations of the directors as exaggerated, or to suppose that, before three years have elapsed, these expectations may not be realised.

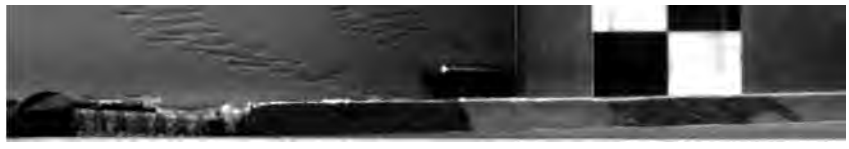
If this be the case, the addition to the amount of Silver now raised, in the year 1830, might be roughly estimated in the following manner:—

	Dollars.
Real del Monte Company . .	2,500,000
Bolaños	2,000,000
Anglo Mexican . . .	3,700,000
Tlalpujahua . . .	850,000
Mexican Company . . .	200,000
Catorce Company . . .	250,000
United Mexican . . .	3,000,000
German Company . . .	440,000
American Companies . . .	60,000
Total	13,000,000

In this calculation I have taken the produce of the three first Companies at the estimate of their own directors.

I have allowed for Tlalpujahua what I conceive to be a very moderate sum, considering the exclusive possession by that Company of all the mines of the District, and the great riches that were, undoubtedly, drawn from them in former times, although the records of those times have been lost.

For the Mexican Company I have allowed more than their present produce would seem to warrant, in consideration of their having only just received the means of carrying on their works with vigour, by the arrival of several German miners, whose



assistance, in Oaxaca, was the more necessary from the inexperience of the native miners of that state.

The expectations of the Catorce Company cannot be realised so early as 1830, as their works are now suspended: I therefore take the probable produce, in that year, much under the estimate formed in the preceding part of this Section.

For the United Mexican Company I have assigned a sum, which is small, if a calculation of the probabilities in favour of the Association be formed upon the same basis as that which has been adopted for all the rest. But Mr. Alaman's refusal to give an opinion, renders caution in a mere observer doubly necessary.

I have supposed the progress of the German Company to be slow, from the uncertainty of any addition being made to its present capital.

In all, I have given Produce, not Profits, for these, of course, depend upon the manner in which the operations of the Companies are conducted, every shilling injudiciously expended, being, in fact, so much deducted from them.*

* It often happens that mines which are producing silver to a very considerable amount, yield no profit at all to the proprietors, the whole produce being absorbed by the expences. This was the case at Bolaños in 1795, when five thousand mules were employed in the drainage; and more recently, in the mines of Veta Grande at Zacatecas, which, when taken by the Bolaños Company, though producing ten thousand dollars weekly, barely covered the expences of working.

The sum total gives an addition of thirteen millions of dollars to the present produce of the country in, or before, the year 1830.

It remains, therefore, to inquire into the Second part of the question now under review, viz. :—

"The probability of the general produce of the country being so increased by these returns, (or by any other causes,) as to equal, or ultimately to exceed, the annual average produce before the year 1810."

The Coinage of Mexico, although its average amount, from 1811 to 1825, was something more than Ten millions of dollars per annum, as stated in the first Section of this Book, rather decreased, than increased, towards the latter part of this period, and did not amount in the year 1826, to more than Seven millions and a half of dollars: (Vide table of Coinage marked No. 12, Section I.) The causes of this diminution I have endeavoured to develope in the preceding Section.

It does not arise from any deterioration of the mines themselves: they are what they were in 1810, and, consequently, are equally capable of producing what they then produced: but the capital which gave, at that time, so great an impulse to the Mining interests, has been withdrawn from the country, or diverted into other channels. The outlay of the Companies is not, by any means, an equivalent for that capital; and many years must elapse before that equivalent be found: I mean,

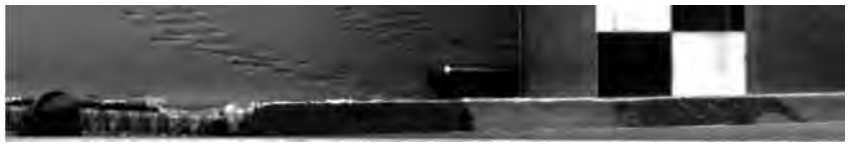
before a system can be re-organised, that will give to every class of Mining adventurers the facilities, and advantages, which they enjoyed before 1810. A great proportion of the expenditure of the Companies consists, at present, in dead works,—Amalgamation works,—roads, and stock,—all indispensable as preparations, and highly beneficial to the country in general, but not to the interest of the miners, (I mean, those not employed in the Companies,) to whom *Avios*, or advances in money, are essential, which they can no longer obtain. Besides, the mining population itself has decreased, and there are many districts, in which a want of hands is severely felt. I do not, therefore, think it probable that, even under the most favourable circumstances, the produce of the country can, for some time, exceed the amount of the present coinage, added to that given by my calculation of the probable produce of the Companies, which would make a total of about Twenty millions of dollars.

To this I think it may rise in the year 1830; and should it do so, the increase afterwards will be gradual, but progressive; new mines will be brought into activity as the present scarcity of capital diminishes; and, provided public tranquillity be not disturbed, there is reason to believe that the produce of the mines of Mexico, in five years after that time (1835) will be nearly equal to the annual average amount derived from them before the Revolution.

In taking this view of the subject, I feel myself

bound to state that I have been thought too sanguine by many persons to whom I have communicated it, and, amongst others, by some, for whose general knowledge of Mexico I have the highest respect; but at the same time I must add, that the apprehensions, which I have heard expressed, originate either in causes entirely unconnected with the mines, (principally of a political nature,) or in a supposition that the errors committed by the Companies on their first establishment are still persevered in, and, consequently, still occasion the lavish expenditure, with which they were necessarily attended at the outset.

Upon the last of these points my visit to the Mining Districts has relieved me from all doubts. The Companies have served their apprenticeship: they have paid dearly for their experience, it is true; but they have learned that nature is not to be forced, and that, without the strictest attention to economy, and to all the details of management, no command of capital can ensure success. Their establishments have been reduced in consequence; and it only remains, therefore, to inquire, whether the mines are sufficiently good to cover the expence already incurred, and still to hold out a reasonable prospect of advantage? This I have endeavoured to ascertain by a reference to the only data, upon which an estimate can possibly be formed; and by instituting a comparison between the expenditure of the Companies and the former produce of the mines



worked by them, as given by Official Records: the result is comprised in one table, and it certainly does appear to be that the mines are able to pay off the whole outlay, in three or four years, provided the produce in 1829 be not very much below the standard of the average annual produce before 1810. This I see no reason to apprehend; for the mines have remained unchanged, and untouched, during the Revolution. In lieu of being exhausted by progressive workings, their riches were locked up, if I may use the expression, by the accumulation of water; and it is only now that the lower levels, from which nine-tenths of the silver raised in 1810 were extracted, are beginning to become accessible. What, then, is to prevent the produce from reaching its former standard, calculated as that standard has been, in this Book, not upon traditionary sayings, or vulgar report, (which is but too often synonymous with vulgar error,) but upon the evidence of those Records, that have survived the Revolution? More than this I do not wish at present to assume; for I think so highly of the ability and practical experience of the Mexicans in all mining matters, that I am very much inclined to believe that we have, at least, as much to learn from them, as they from us. I therefore reject, at once, all those ideas of European mining on the other side of the Atlantic, which have been attended, hitherto, with much ruinous effect: but having admitted this, it would be hard to deny that the accession of science,

and skill in machinery, which we bring into the present coalition, when combined with the knowledge of their own country, which the Mexican miners possess in the very highest degree, and applied, gradually, in the mode best adapted to the local peculiarities of each District, must, in the end, have a beneficial influence, and must tend to increase, ultimately, the annual produce of the mines.

This has been already exemplified in more than one instance, as at Real del Monte, and Bolaños, neither of which Districts could have been worked without the aid of European science, to direct the efforts of the natives. In other districts, where capital alone was wanting, the introduction of our machinery was superfluous; in all, however, it will be hereafter of use, for there is a point, at which the machinery of the country, (however improved) ceases to be of any avail. I do not, therefore, regard the expence which has been incurred at Guanajuato, by the Anglo-Mexican Company, for machinery, (but a small portion of which is now in use,) as money lost to the Adventurers. The expence might have been avoided, and was therefore injudicious, as it increased the outlay, in the first instance, so enormously, as almost to occasion the dissolution of the Company; but a time will come, (before the contracts can expire,) when a part, at least, of this machinery may be turned to account upon the spot; while, if the impulse given to the mines continue, opportunities will be found for disposing of

the remainder to Adventurers in other Districts, where the use of it would not be restricted by that scarcity of fuel, which, in Guanajuato, would render the general application of the larger engines sent out in 1825, utterly impossible.

With regard to the political apprehensions to which I have alluded, I do not feel myself at liberty to speak. The seeds of disorder certainly still exist in Mexico; and it is, unfortunately, not less certain that, were they to lead to civil dissensions of a serious nature, the mines must suffer from the effects of the struggle. But although I will not predict those halcyon days of peace and concord, which some of the admirers of Republican principles seem to regard as the necessary consequence of the system which has been adopted, I have no hesitation in repeating here, what I have stated in the preceding parts of my work, namely, that great progress has been made towards a better order of things, and that the more I saw of the country, the more I became convinced that the people were wearied out with Civil war, and desired nothing but independence and tranquillity. The race of the old Insurgents has died off; the population of the Provinces has reverted to its original pursuits; and although a struggle for place and power may be carried on with great personal animosity in the Capital, the States are indifferent as to the result, and are occupied only with their own affairs.

I am not aware of the existence of any cause,

(with the exception always of a hostile movement on the part of Spain,) that could again disorganise the great mass of the population; and it is this alone that the Companies in general have to apprehend. Partial disturbances indeed may, and probably will occur; but these are of little moment, and could hardly exercise any very prejudicial effect upon the Mining interests of the country, from which so large a portion of the Mexican community derives its subsistence at present, and to which, consequently, they are not less interested than the foreign Adventurers themselves, in affording protection.

The same observation holds good with regard to an increase of duties on the part of the Government, (of which I have heard great fears expressed here,) as soon as the mines begin to become productive anew. Upon this subject it is impossible to give the Adventurers any other security than that which they may derive from the reflection, that this increase of duties must weigh as heavily upon the Mexican proprietors, as upon themselves. The mines are private, not public, property; and the produce, (according to the terms of the contracts,) after the repayment of the capital invested by the Companies in the first instance, is to be divided equally between the Adventurers and the Mexican proprietors.

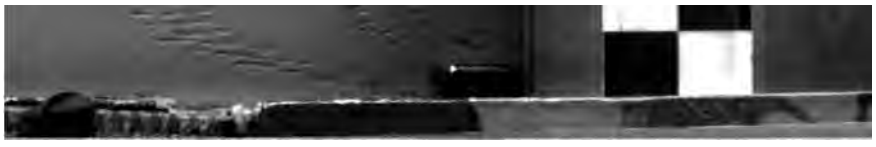
In order to favour the attempt to work the mines anew by the assistance of foreign capitals, the duties formerly paid on the Silver raised, (seventeen per cent.,) were reduced to about five and a half. There

was no pledge that, when the capitals were repaid, some increase would not be made in the duties: but there is also no reason to suppose that they will ever again be raised to their former standard, because the interests, not of the foreign capitalists, but of the very influential class of Mexican proprietors, require that they should not be so. The amount of duties was formerly fixed by the Mother-country. It now depends, not even upon the Executive of Mexico, but upon an assembly of native Mexicans, amongst whom the great Mining Districts are sure to be adequately represented. It is, therefore, hardly natural to suppose that they will give their sanction to a measure by which they themselves will be the first to suffer; nor can they, in any way, in a country which pays for all its Imports in bullion, impose a duty upon the Silver raised in such a manner as to bear upon Foreigners, without affecting themselves. I leave good faith entirely out of the question in this view of the case, because, though always appealed to, it is, I fear, of but little weight with any Government in discussions of this nature. But I cannot refrain from adding that, in the whole course of my residence in Mexico, I have seen nothing on the part of the Government to warrant the supposition, (which those who wish to regard American affairs in the most unfavourable light, so gratuitously make,) that it would violate all its engagements with Foreigners, merely on the score of their not being natives, or seek to deprive them of the fair

fruits of their labours. I believe, on the contrary, that a conviction of the advantages which Mexico derives from her intercourse with Europe, has been gradually taking root during the last four years; that many of the exaggerated ideas which were entertained in 1824, of the importance of the New World to us, have given way to a belief that this importance is (to say the least) reciprocal; and that a disposition to cultivate a good understanding with the commercial nations of Europe has increased in proportion to the increased wants which Europe is called upon to supply. I have given in the Third Book some instances of the existence of this feeling, as well as of the ameliorations to which it has already led with regard to Trade: why then should its existence be assumed as impossible, and its operation supposed not to extend to the mines, in which the interests of the Mexican and British Adventurers are much more closely interwoven with each other, than they can be in any other species of international intercourse?

The above observations are merely matters of private opinion, but as such I leave them to the consideration of my readers, who will give them as much, or as little importance, as they may seem to deserve.

I come now to the probability "of the annual average produce ultimately *exceeding* the Twenty-four millions of dollars, which were drawn from the mines before 1810."



This probability depends, in my opinion, in a great measure, upon the time at which the attention of the Adventurers in the Mines of Mexico is directed towards the North.

It seems, at first sight, a singular fact, in the history of a country so celebrated for a spirit of mining enterprise as Mexico, that, during three centuries, that spirit should have been confined to a comparatively small circle; and that, with some few exceptions, the richer ores of the Internal Provinces, should have been neglected for the poorer districts in the vicinity of the Capital.

But this fact admits of one simple explanation.

As long as the monopoly of the Mint of Mexico continued, it was absolutely impossible, in the Interior of the country, to obtain a sufficiency of the circulating medium to carry on any great mining enterprise; and, even to commence one, a triple capital was required, as six months elapsed before silver, sent in bars from the North, could be brought back converted into specie.

Dollars were often at a premium in Guanajuato itself; but in the North, they became an article of trade, the price of which, like that of all other articles, increased in proportion to the scarcity of the supply; so that both the Mine-owner, and the Rescatador, (amalgamater on his own account,) were obliged to convert their silver into specie at a loss of one-third of its legal value; while, for every article consumed in the mines, for which they exchanged

Plata Pasta, or silver in a raw state, they paid at least double the market price.

It will hardly be believed that silver of the finest quality has been sold, (and currently sold) in the Northern provinces, at four dollars two reals, and four dollars four reals per marc, the Mint price being eight dollars.*

Few mines, however rich, could be worked under these disadvantages, and they sufficiently account for the preference, which was given by the old miners to ores, that yielded seven and eight marcs of Silver on the Monton of thirty-six quintals, if within seventy or one hundred leagues of the Capital, in lieu of exploring the tantalizing wealth of the North, where, although fifteen and twenty marcs were yielded by the same quantity of ore, the whole profit was absorbed by usurious charges on every thing else.

These reasons became only more cogent after 1810; for, although Mints were established at Durango, and Chĭhuāhuă, quicksilver rose in price, during the Revolution, from forty-one dollars to one hundred and forty, and one hundred and fifty dollars per quintal; while the general want of confidence, and capital, rendered it impossible for the miners to obtain advances, *(Avios,)* even by the greatest sacrifices.

The whole country, therefore, North of Durango,

* *Vide* Reports of Tribunal de Mineria.

remains almost unexplored. That it will long continue so, I do not believe, for public attention has already been turned in this direction, and should the first adventurers succeed, an extraordinary change may be expected to take place in the Mining interests of New Spain in the course of the next twenty years.

That the great mineral treasures of Mexico commence exactly at the point where Humboldt rightly states the labours of the Spaniards to have terminated, (about Latitude 24°,) is a fact now universally admitted by the native miners, although, hitherto, but little known in Europe.

In order the better to illustrate it, I shall beg to subjoin some details, which I was enabled to collect during my journey into the Interior, premising, that I have the evidence of Registers of produce, and official documents, for every fact that I submit to my readers, (some of the least voluminous of which I subjoin,) and that I have adopted nothing upon mere verbal report.

The States of Durango, Sonora, Chihuahua, and Sinaloa, contain an infinity of mines hitherto but little known, but holding out, wherever they have been tried, a promise of riches superior to any thing that Mexico has yet produced.

The Districts, a list, or sketch of the principal of which will be found in Table IV., are distinguished, not less by the superior quality of their ores, than by the circumstance of their beginning to be

productive within a very little distance from the surface (usually from ten to fifteen yards); whereas the Veta Madre of Guănăjūătŏ yields little or nothing until the depth of eighty yards is attained. The metals seem to increase in richness as you approach the North; insomuch that in the Real, or District, of Jesus Maria, in that great branch of the Sierra Madre, which separates the States of Durango and Chihuahua, from those of Sonora and Sinaloa, to the North and West,—the ores of the mine of Santa Juliana (which does not exceed seventy yards in depth) appear, by a certified Report from the Diputacion de Mineria, now before me, to average seven and eight marcs of silver per carga, of (300 lbs.,) which is the average produce of ten cargas of good ore in Guănăjūătŏ; while ores of the best quality yield as much as from four to ten marcs per Arroba, (of 25lbs.) or forty marcs per carga.

At Bătŏpīlăs, (in the State of Chĭhūāhuă,) where the matrix is, in general, quartz, the pure malleable silver intermixed with it often exceeds in proportion one half; and masses of this description, of the weight of eleven Arrobas, (270 lbs.,) have been raised. One of five Arrobas in weight, (125 lbs.,) was in existence at Chĭhūāhuă during my visit to the North, and I was even solicited to purchase it for the British Museum.

Only three Districts in the North have been, hitherto, worked with any sort of regularity, Santa Eŭlālĭă, Bătŏpīlăs, and Guărĭsămēy.

The first, (Santa Eulalia,) from its vicinity to the town of Chihuahua, was worked as early as 1705.

Its registered produce, from that time to 1737, was 55,959,750 dollars, or an average of 1,748,742 dollars per annum. From 1737 to 1791, it yielded something more than Forty-four millions, making a total of One hundred millions of dollars during a period of Eighty-six years.

The district was gradually abandoned during the last years of the last century, on account of the incursions of the savage Indian tribes; but in 1791, it possessed a population of 6,000 inhabitants, with seventy-three Haciendas for reducing metals, and one hundred and eighty smelting furnaces. All these are now in ruins, and the produce, during the last thirty years, has been little or nothing; the whole receipts of the Provincial Treasury of Chihuahua having only amounted to 10,769,096 dollars from 1791 to 1825; but the possibility of restoring the mines to what they were, is, in the opinion of the natives, undoubted.*

From Bătŏpīlăs, and Guărĭsămēy, I have been unable to obtain returns as exact as those from Santa Eulalia; a great part of the wealth derived from the first, by the Marquis of Bustamante, having been

* In this they are probably misled by their attachment to a place, which, during so long a period, was the source of the prosperity of the State; for with so many virgin districts in every direction around them, it can never be advisable for Foreign Capitalists to attempt the regeneration of Santa Eulalia.

sent out of the country unregistered, during the Revolution, by the ports of Măzătlān, and Guāymăs. But it is upon record, at Durango, that Zămbrānŏ, who was the proprietor of all the principal mines of Gŭarĭsămēy and Săn Dīmăs, paid, as the King's fifth, upon the Silver raised from the mines, between the period of their discovery, (in 1783,) and 1807, when he died, Eleven millions of dollars. These immense riches were derived principally from five great mines, La Candelaria, (at San Dimas,) San Juan Nepomuceno, Cinco Señores, La Abra, and Tapia; of one of which, (La Candelaria,) I possess the regular returns for five years, which prove the annual profits never to have been less than 124,000 dollars, while in some years they amounted to 223,082*. The ores of the mine, during the whole of this period, appear to have produced from five to six marcs per carga, (of 300 lbs.) and often to have yielded twenty, and even thirty marcs. Indeed, nothing of a quality inferior to the first could have covered the expence of extraction; as, when the Candelaria had attained its greatest depth, (300 Varas,) the water was still brought up from the bottom of the mine in leathern buckets upon men's shoulders. The Ley de Oro (or proportions of gold) in the ores of Guărĭsămēy, is very great, amounting sometimes to 2,100 grains to the marc. But, notwithstanding all these advantages, the mines are now going fast to

* *Vide* Table, No. V.

ruin, the works having been suspended during the Revolution, and the possibility of re-opening them, at present, to any extent, being impeded by a law-suit between the heirs and executors of the former proprietor.

Without entering into similar details, respecting each of the other districts mentioned in the Table of the Northern Mines, (No IV.) it will be sufficient to state that, with some few exceptions,* they all possess, in a greater or less degree, the same advantages; (richness of ores, and veins productive almost at the surface;) that few have been worked to any extent; and, consequently, that the risk of making the necessary experiments there is trifling, in comparison with the immense outlay required by the old mines of the Southern districts, which have, in general, attained an enormous depth. The money which has been invested in the Valenciana, or in Rayas, or in the Biscaina vein, would be sufficient to make a trial of half the Mining districts of the North at once; for no expensive works need be commenced there, until the character of the veins, which it might be in contemplation to work, was sufficiently ascertained. The undertaking would, indeed, require an

* The ores of El Parral, Măpĭmī, and Cuēnc̆mē, are amongst these exceptions, being poor, and abundant. But it is worthy of remark, that none of these districts are included within the range of the Sierra Madre. They all lie in the flat country to the East of it, and partake more of the character of the Central and Southern districts.

adventurous spirit, and a determination to submit to every privation, at first, in order to ensure success: but if these qualities were combined with a sufficient knowledge of the country, and some personal influence, I am inclined to think that, with a very small capital, success would be undoubted.

In the present state of discouragement with regard to all Transatlantic speculations, it is not probable that any experiment of this kind will be attempted upon a large scale, for some time; but I am convinced that, when once it is fairly made, an enormous addition to the mineral wealth of Mexico will be the result. To what extent this may ultimately be carried, it would be useless now to inquire; for, without the assistance of Foreign Capitalists, years will probably elapse before the gradual spread of population facilitates discoveries in those rich districts, where the want of inhabitants now presents a serious obstacle to commercial enterprise.

Population, however, in Mexico, has always followed the course and progress of the mines; and that too with astonishing rapidity. The Mexican miners are proverbially inconstant in their tastes, and roam from one district to another, whenever there is a new discovery, or Bonanza, to attract them.

Of this, Catorce furnished a memorable instance, in the year 1773. It is impossible to conceive a more bleak and desolate spot than that upon which these famous mines are situated,—the very summit of a mountain ridge, inaccessible, even at the pre-

sent day, to any thing but mules, without provisions, or water, or resources of any kind; yet, in three years after the discovery, it had a population of five thousand souls, and the town now contains sixteen thousand inhabitants. The fame of its riches brought crowds of settlers from Guănăjŭatŏ, Zăcătēcăs, and Sōmbrĕrētĕ; and, notwithstanding all the local disadvantages which I have enumerated, these settlers have remained. But the mines of Catorce possessed all the properties which characterise those of the North: they all began to be productive almost at the surface, and all yielded ores of a quality unknown in the neighbouring districts of Zacatecas and Guanajuato.

The metalliferous dust of the famous mine of "Zăvālă," which produced Four millions of dollars in two years, was eagerly bought up, at the mouth of the mine, by Rescatadores, (proprietors of Amalgamation works,) who came from Pinos, and even from Guanajuato, (distances of fifty and eighty leagues,) for the purpose, at the price of one dollar for the pound of ore, (three hundred dollars per carga.)

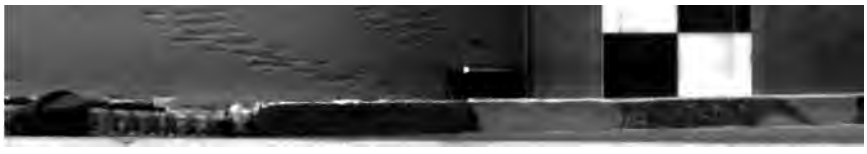
The owner of the mines of Santa Ana and San Geronimo, (Captain Zūnĭgă,) after living upon their produce during his whole life, bequeathed, by his will, (of which I have an authentic copy,) Four millions of dollars, the greatest proportion of which was left to pious institutions. The mine of La Luz, which was denounced in 1804, and is still in full

work, has given to its present proprietor, the Licenciado Gordoa, the estate of Mal Passo, near Zacatecas, (for which he paid 700,000 dollars,) and a million of dollars Capital: the best ores, during this time, have sold, according to the Registers of the mine, at 340 and 380 dollars per carga, (of 300 lbs.)

The ores of a particular level of the mine of La Purisima, which belongs to the family of the Obregons, (*el ojo del cielo*) sold for 600, 400, and 380 dollars per carga; at which price they were bought as late as 1817.*

With such attractions as these, natural difficulties are easily overcome; and I have little doubt that,

* The necessity of a class of middlemen, or Rescatadores, so often mentioned in this Book, was nowhere more strongly exemplified than at Catorce; where almost all the first discoverers were mere adventurers, and consequently unable to establish the necessary works for reducing the ores of their mines. This was done by small capitalists, most of whose establishments are still kept up by the descendants of the families, although the speculation is not now by any means what it was. Hence, the only standard of the value of the ores at Catorce, is the price which they fetch at the weekly sales, which take place at the mouth of the mine. A similar system is pursued occasionally at Guanajuato, where, from the immense mass of ores raised, it was difficult for any individual to raise works sufficiently extensive to reduce them all. The Foreign Companies wish to adopt a different system, and to unite the profits of the Amalgamater with those of the Miner; but in some mines and districts, sales are still resorted to, from the difficulty of abolishing so old a custom.



as soon as their existence in a particular part of this country is generally known, the tide of population will set in that direction; and that establishments will be formed there, which, in the course of a few years, will become of immense importance. Every day is adding to our knowledge of regions, which were formerly considered as positively inaccessible. The Sierra Madre has been traversed seven times, between Ŏăxācă and Chĭhūahŭa, by one very spirited and intelligent English traveller, Mr. Glennie, whose opinion of its riches confirms all that had been surmised in earlier days; and his conviction of the advantages to be derived from mining speculations in that direction, has induced the directors of the United Mexican Company to entrust him with the formation of an establishment at Jesus Maria, (one hundred leagues West of Chihuahua, upon the slope of the Sierra Madre,) which I consider as a first step towards that revolution in the mining affairs of Mexico, the probability of which, in the course of twenty or thirty years, I cannot but look forward to.

Some Americans have endeavoured to establish a Company for Bătŏpīlăs, but have not, I believe, as yet, succeeded in raising a sufficient capital.

A Mexican Company for working some of the mines of Sŏnōră was likewise proposed in the capital very lately, but failed; I believe, in consequence of a want of confidence in the persons who wished to promote its formation.

A similar enterprise will shortly be attempted in England, by an English gentleman, (Colonel Bourne,) who has been long a resident in Mexico, in conjunction with Mr. Escalante, the representative of the state of Sŏnōră in the Senate.

They have taken up contracts for the mines of Ărīzpĕ, (about 36° north latitude,) in a situation possessing great local advantages, a fertile country, the vicinity of two large rivers, and a communication by water with the Pacific. The mines themselves were formerly celebrated for their riches, and the capital required to bring them again into activity is very small.

The specimens which I have seen of the ores extracted from them, almost induce one to adopt the theory, that the proportion of silver contained in the ores increases as you advance towards the North; a theory which is very generally believed, at present, in Mexico, and which is certainly confirmed by the superiority of all the Northern ores to those of the richest districts in the South.

The idea probably originated in the discovery of the famous Bolas de Plata, (Balls of Silver,) of Ărĭzōnă, in the beginning of the last century, which was, and probably still is, believed in Europe to be one of those fables, with which mining countries always abound.

But the attention of the present Government of Mexico having been drawn to the subject, a search was made in the Vice-regal Archives, by order of

the President, for the correspondence, which was known to have taken place respecting it in the year 1736.

This correspondence I have seen, and I have in my possession a certified copy of a Decree of Philip the Fifth, dated Aranjuez, 28th May, 1741, the object of which was to terminate a prosecution, instituted by the Royal Fiscal, against the discoverers of Ărĭzōnă, for having defrauded the Treasury of the duties payable upon the masses of pure silver found there.

The Decree states the weight of the Balls, Sheets, and other pieces of silver discovered, (*bolas, planchas, y otras piezas de plata,*) to have amounted to 165 arrobas, 8lbs., in all, (4033lbs.): and mentions particularly one mass of pure silver, which weighed 108 arrobas, (2700lbs.,); and another of eleven arrobas, upon which duties had been actually paid by a Don Domingo Asmendi, and which, as a great natural curiosity, (*como cosa especial*) the King states ought to have been sent to Madrid.

The Decree ends by declaring the district of Arizona to be Royal property, as a "*Criadero de Plata*;" (a place in which, by some natural process, silver was created;) an idea, to which the flexibility of the metal, when first extracted, seemed, in those times, to give some colour of probability; and by directing it to be worked upon the Royal account. This put a stop to the enterprises of individuals; —the district was deserted; an attempt to send a

sort of colony there failed; and, in a few years, the very name of Arizona was forgotten.

I am far from supposing that the whole of the facts recorded in this Decree can be taken as correct, although the authenticity of the Decree itself is unquestionable. But what one cannot adopt without confirmation, ought not to be rejected without inquiry; and I see enough, at least, in these Records of Arizona, to warrant the supposition, (confirmed as it is by the facts and appearances which I have mentioned in the preceding pages,) that the hitherto unexplored regions in the North of Mexico, contain mineral treasures which, as discoveries proceed, are likely to make the future produce of the country infinitely exceed the amount that has been, hitherto, drawn from the (comparatively) poorer districts of the South.

In how far these discoveries must be influenced by the progress of population, and in what degree the discoveries themselves may be expected to influence that progress, remains as a subject of inquiry for the fourth and last Section of this Book; in which I shall endeavour to point out the connexion between the Mines, and the Agriculture, and Commerce of Mexico, as the best mode of illustrating the effect likely to be produced by their prosperity upon a population, the general interests of which they so effectually promote.

TABLE No. I.

Produce of Bolaños from 1752 to 1780.

Years.	Marcs.		Dollars.	Reals.
1752	261,681	2	2,158,870	½
1753	211,808	5	1,747,421	
1754	210,039	6	1,732,827	¾
1755	238,927	2	1,971,149	¾
1756	284,158		2,344,303	½
1757	251,633	2	2,075,974	¼
1758	223,678	7	1,845,350	½
1759	166,106	7	1,370,381	½
1760	165,787	7	1,367,749	¾
1761	127,199	2	1,049,393	¾
1762	73,998	2	603,060	½
1763	68,337	6	563,786	¼
1764	79,336	3	654,525	
1765	69,825	7	576,063	¼
1766	79,977	2	659,812	¼
1767	55,150	4	454,991	½
1768	55,152	2	455,006	
1769	64,374	5	531,090	½
1770	59,197	4	488,379	¼
1771	49,753		410,462	¼
1772	49,302	6	406,747	½
1773	53,852	4	444,283	
1774	69,075	1	569,869	¼
1775	69,390	7	572,474	½
1776	110,688	7	913,183	
1777	128,540	6	1,060,461	
1778	133,244	6	1,099,269	
1779	145,894		1,203,625	½
1780	147,055	5	1,213,208	¾
Total	3,702,269	5	30,543,720	¾

From 1646 to 1752, Gamboa states the average annual produce to have varied from three and a half, to four millions of dollars.

TABLE No. II.

Produce and Expenditure in the Mine of Valenciana from 1788 to 1810, and from 1811 to 1825.

FIRST PERIOD.

Years.	Total Produce.		Expences.		Profit.	
	Dollars.	Reals.	Dollars.	Reals.	Dollars.	Reals.
1788	1,571,216	2½	429,159	2½	1,142,057	0
1789	1,633,459	0½	448,133	1	1,185,325	7½
1790	1,499,939	1½	454,523	5	1,045,415	4½
1791	1,639,085	4	733,321	0	905,764	4
1792	1,049,753	0	757,173	4	292,579	4
1793	1,042,876	0½	738,354	2	304,521	6½
1794	1,282,042	0½	799,328	2	482,713	6½
1795	1,696,640	3½	815,817	6½	880,822	5
1796	1,315,424	1½	832,347	0	483,077	1½
1797	2,128,439	2½	878,789	2	1,249,650	0½
1798	1,724,437	4	890,735	5	833,701	7
1799	1,584,393	1½	915,438	5½	668,954	4
1800	1,480,933	7	977,314	5	503,619	2
1801	1,393,438	0	991,981	7	401,456	5½
1802	1,229,631	1	944,309	1½	285,321	7½
1803	1,232,045	0	937,931	6½	294,113	1½
1804	1,185,265	5	941,121	1	244,144	4
1805	1,113,756	4	946,346	6	167,409	6
1806	1,040,632	7	914,662	7	125,970	0
1807	1,191,582	2	1,019,781	3½	171,800	6½
1808	1,523,815	6	1,205,924	1	317,891	5
1809	1,385,611	1½	1,204,333	1	181,278	0½
1810	869,068	3	899,521	1½		
	31,813,486	3½	19,676,349	4½	12,167,589	5½
			Deduct loss in year 1810		30,452	6½
			Clear Profit		12,137,136	7

TABLE, No. III.

Produce and Expenditure in the Mine of Valenciana from 1788 to 1810, and from 1811 to 1825.

SECOND PERIOD.

Years.	Total Produce.		Expences.		Profit.	
	Dollars.	Reals.	Dollars.	Reals.	Dollars.	Reals.
1811	323,762	2½	122,687	6½	201,074	4
1812	279,599	7	144,002	7½	135,596	7½
1813	258,920	3½	238,443	1½	20,477	2
1814	305,638	6½	215,257	3	90,381	3½
1815	279,346	0	235,519	6½	73,826	1½
1816	178,512	7	149,030	5½	29,482	1½
1817	165,986	5½	136,429	1	29,557	4½
1818	174,971	1½	142,317	2½	32,653	7
1819	202,414	5½	180,743	1	21,671	4½
1820	80,183	6	63,351	3	16,832	3
1821	101,138	6½	72,809	5½	28,329	1
1822	70,450	4½	60,575	2	9,875	2½
1823	36,199	1	32,045	3½	4,153	5½
1824	117,143	5½	87,341	3	29,802	2½
1825	31,413	4	11,588	7	19,824	5
	2,605,682	2½	1,862,143	3	743,538	7½

TABLE, No. IV.

MINING DISTRICTS OF THE NORTH.

STATE OF DURANGO.

In the Sierra Madre—Guarisamey, San Dimas, Gavilanes, Tayoltita, Canelas, Sianori, Bacis, Tamasula, Ventanas, San Andres.

East of the Sierra Madre—Cuencame, (near the River Nazas,) Yervabuena, Mapimi, Indee, El Oro, Guanaseví.

STATE OF CHIHUAHUA.

El Parral, Santa Eulalia, Batopilas, Jesus Maria, Los Pilares, Capirichie, Santa Rosa de Cosiquiriachic, El Pilar, Batopilillas, Rosario, El Potrero, Milpillas.

STATE OF SONORA AND SINALOA.

Mulatos, Cosala, Alamos, Arispe, El Rosario.

TABLE, No. V.

LA CANDELARIA.

			Dollars.	Reals.
1795.	Produce . .		258,936	
	Expences . .		128,384	
		Profits .	130,552	
1796.	Produce . .		359,361	
	Expences . .		136,279	
		Profits .	223,082	
1803.	Produce . .		225,778	6¼
	Expences . .		101,416	1¾
		Profits .	124,362	4¾
1804.	Produce . .		260,555	2⅝
	Expences . .		117,240	0¾
		Profits .	143,315	1⅞

SECTION IV.

SOME GENERAL OBSERVATIONS UPON MEXICO AS A MINING COUNTRY; WITH AN INQUIRY AS TO THE PROBABILITY OF HER BEING ENABLED BY HER MINERAL TREASURES TO MULTIPLY HER COMMERCIAL RELATIONS WITH EUROPE, AND TO ACQUIT THE INTEREST OF WHATEVER LOANS SHE MAY HAVE CONTRACTED THERE.

IT is to Baron Humbolt's Essai Politique that Europe is indebted for whatever knowledge it now possesses of the peculiarities by which Mexico is distinguished as a Mining country. How little was known before his time may be inferred from the fact, that Robertson, celebrated, as he so justly is, for the diligence and accuracy of his researches, in his view of the Colonial Policy of Spain, confounds, every where, the climate of Mexico with that of Peru and Chilé, and deplores the mortality occasioned amongst the natives, (whom he supposes to have been compelled to work in the mines,) "by the sudden transition from the sultry climate of the valleys, to the chill, penetrating air, peculiar to high land in the torrid zone." I need hardly state that, the idea is a mistaken one; and that however miserable the lot

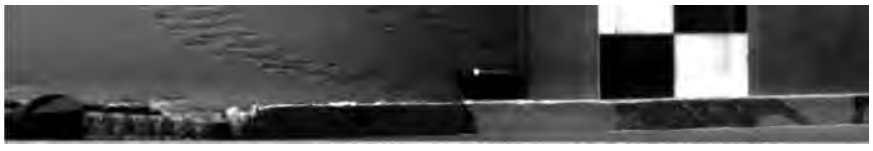
of those poor wretches may be, whose sufferings, amidst the eternal snows of the Andes, (at Upsallata, and San Pedro Nostoli,) Captain Head so forcibly describes, there is no sort of analogy between their situation, and that of the mining population of New Spain. Compulsory labour has never been known there; and the temperature of Zăcătēcăs and Guănăjūātŏ, where the first mines were worked, differs but little from that of Tlăscālă, Chŏlūlă, and Tĕnōchtĭtlān, where the population was found to be most concentrated at the time of the Conquest.

So little, indeed, are the metalliferous ridges, which have been, hitherto, the seat of the great mining operations of the Spaniards, elevated above the level of the Table-land, that, with the exception of Jesus Maria, (North-west of Chihuahua,) I hardly know one mining district, in the vicinity of which the snow remains long on the ground. Real del Monte, and Tlalpujahua, are certainly not warm; and the first is liable to be occasionally enveloped in clouds, as is the district of El Oro, near Zĭmăpān, and many others on the Eastern branch of the Cordillera. But the difference between their level, and that of the Capital, does not exceed 1,500, or 2,000 feet, (as will be seen by a reference to the map of Routes and elevations annexed to this volume,) and the cold felt there by visitors from the warmer districts, is merely relative; the Thermometer seldom falling below 40° of Fahrenheit, except in the nights, which are sometimes severe. This temperature seems

well adapted to the constitution of the Indians, who flock to these mountain districts with their families, on the report of any new discovery, and appear to thrive there as well as upon the Table-land. There are particular tribes of Natives, who have been miners from generation to generation, and who lead a roving life, migrating, with their wives and children, from one district to another, as they are attracted by the fame of superior riches. A mine in Bonanza, in whatever part of the country it may be situated, is sure of a sufficient supply of workmen, because the system of payment by Partido, (a share in the ore raised,) which is usually resorted to upon such occasions, is always preferred to regular wages, however high, for dead works. It was by employing liberally this powerful incitement to exertion, that the Old Spaniards found means to create a population in the most distant and desolate districts, without having recourse to the Mita or Tanda, which, in Peru and Chili, was in such general use; while it is not improbable, that the absence of that system of forced labour, which was adopted South of the Equator, has contributed not a little to encourage that love of mining, which prevails at the present day, amongst the natives of New Spain. Far from looking upon it with dread or repugnance, they regard it as their natural occupation, and appear to feel, in many parts of the country, a sovereign contempt for the agricultural population, which is reduced to vegetate upon a scanty daily pittance, without a

chance of acquiring that sudden wealth, which sometimes falls to a Barretero's lot. In addition to these accidental advantages, the ordinary wages of a miner are high; and although the money which passes through his hands is usually as ill spent, as it is rapidly acquired, still, to ensure the means of indulging in a weekly excess, (the necessity of which seems to be an article of the mining creed in every country,) there are few Indians who will not enter gladly upon a week of labour.

It is not, therefore, to be apprehended, that the late change of institutions in Mexico will occasion any difficulty in finding hands to carry on mining operations there, to whatever extent they may be pushed by the Companies, although there have been great complaints upon the subject, hitherto, in many districts, from the total dispersion of the population during the Civil War. Things revert, however, gradually, to their former state, and that without the necessity of any extraordinary exertion. At Tlālpŭjāhŭa, for instance, upon the first arrival of the Company, (in 1825,) one hundred and fifty labourers were collected with difficulty. In 1827, from twelve to sixteen hundred persons were in daily employment in the mines, besides from six to seven hundred more, who were occupied in cutting wood, and making charcoal in the neighbouring mountains. At Guanajuato, within one year after the establishment of the Anglo-Mexican and United Mexican Companies, the population increased from thirty to



nearly forty-five thousand. A similar change took place at Zăcătēcăs, Sōmbrĕrētĕ, and Real del Monte. Hundreds of Indians emerged from the fastnesses, in which they had been dragging on a precarious, and almost savage existence, in the midst of every kind of privation, to seek a livelihood by active labour; and this disposition must necessarily increase, as the advantages derived from it become more apparent.

It will not, however, produce its full effect, until the mines begin to yield ores anew, for it is only the really industrious part of the population that has sought employment, hitherto, in the preparatory works; but, from the moment that these are concluded, it is very generally thought that there will be no deficiency of labourers.

I have already pointed out the fact, that the importance of the mines of Mexico consists not merely in the amount of the Mineral treasures which they produce, but in the impulse which is communicated by them to all the other great interests of the State.

In a country, the largest and most fertile portion of which, (the Table-land,) is precluded, by the peculiarity of its position, and by the want of a water-communication with the Coast, from exchanging its produce for that of European industry, the great mass of the population would be reduced to the lowest state of indigence, were it not for the home-market created by the mines. In this respect, the very poverty of the ores of Mexico was an advantage, by increasing enormously the scale upon which

Mining establishments were necessarily formed. We have seen that the Three millions of marcs of silver, to which the average annual produce of the country amounted, were extracted from Ten millions of Quintals of Ore; and I have endeavoured to give, in the second Section, some idea of the process, by which the separation of the Silver from this mass of extraneous substances was effected. The number of men and animals employed in it was immense, and in every place where they were thus congregated, a demand was created for Agricultural produce, which rose, as the importance of the mines increased, and called gradually into existence a cultivation, of which no trace was to be found before. Such has been the progress of civilization, and of Agricultural industry, throughout New Spain. With the exception of the Capital, which, as the seat of Government, derived its importance from other sources, and the towns of La Pŭeblă, Guădălăjāră, Vălladŏlīd, and Ŏăxācă, which were selected as the seats of the great Episcopal establishments of the country, there is hardly a single town in Mexico, that does not derive its origin, directly or indirectly, from the Mines; while, in like manner, cultivation will be found to extend in a long line from South to North, with occasional inclinations to the East and West, (following always, in its direction, that of Mining discoveries,) the course of which may be easily traced upon the map.

The most fertile portions of the Table-land are,

the Băxīŏ, which is immediately contiguous to Guănăjūatŏ, and comprises a portion of the States of Văllădŏlīd; Guădălăjārā, Quĕrētărŏ, and Guanajuato: The Valley of Tŏlūca, and the Southern parts of the State of Valladolid, which supply both the Capital and the Mining districts of Tlālpujāhŭa, Él Ōrŏ, Tĕmăscāltĕpēc, and Āngāngēŏ; the plains of Păchūcă and Āpăm, which extend, on either side, to the foot of the mountains, upon which the mines of Real del Monte and Chico are situated; Ĭtzmĭquīlpăn, which owes its existence to Zĭmăpān; Āgŭascălīentĕs, by which the great Mining town of Zăcătēcăs is supplied; a considerable circle in the vicinity of Sōmbrĕrētĕ and Frĕsnīllŏ; the valley of the Jaral, and the plains about San Luis Pŏtŏsī, which town, again, derives its name from the mines of the Cerro de San Pedro, (about four leagues from the gates;) the supposed superiority of which to the famous mines of Pŏtŏsī, in Peru, gave rise to the appellation of Pŏtŏsī. A little farther North we find the district of Mătĕhūălă, which is now a thriving town, with seven thousand inhabitants, created by the discovery of Catorce; while about the same time, (the latter part of the last century,) Durango rose into importance from the impulse given to the surrounding country by the labours of Zămbrānŏ, at San Dīmăs and Guădĭsămēy. Its population increased in twelve years, from eight to twenty thousand; while whole streets and squares were added to its extent by the munificence of that

fortunate miner. To the extreme North, Santa Eŭlālĭă gave rise to the town of Chĭhūahŭa; Bătŏpīlăs, and El Părrāl, became each the centre of a little circle of cultivation; Jesus Maria is, at the present day, producing a similar effect; Măpinī, Cuĕncămē, and Ĭndĕē, (a little more to the Southward,) served to develope the natural fertility of the banks of the river Nāzăs; while in the low hot regions of Sŏnōră and Cĭnălōă, on the Western Coast, almost every place designated in the map as a town, was originally, (and generally is still,) a Real, or district of mines.

Such was the case with Ălămŏs and Cŭllăcān, and Cŏsălā and Ĕl Rŏsārĭŏ; and such will be found to be the case with an infinity of other towns and villages scattered over the territory of the Mexican Republic, which, but for the mines, never would have existed at all. When once formed, these establishments, as Humboldt very justly observes, often survived the mines which gave them birth; and turned to agricultural labours, for the supply of other districts, that industry which was at first devoted solely to their own. Some, however, are so unfavourably situated as necessarily to follow the fate of the mines; in which case their population goes to swell that of the nearest district where there is a demand for labour, but might easily be diverted into more distant channels, were the advantages held out sufficiently great to compensate the difficulties of the removal.

An examination into the sources of the wealth of the principal families of the Mexican nobility will confirm what I have stated with regard to the towns, by leading us nearly to the same result. The family of Rēglă, which now possesses landed property to an immense extent in various parts of the country, purchased the whole of it with the proceeds of the mines of Real del Monte. The Făgŏāgăs owe their present importance to the great Bŏnānzä of the Păvĕllōn at Sŏmbrĕrētĕ. The estates of the family of Vībānco proceeded from the mines of Bŏlāñŏs. The houses of Vălĕnciānă, Rūhl, Pĕrĕz, Gālvĕz, and Ŏtērŏ, are all indebted for their possessions to the mines of Valenciana and Vīllălpāndŏ, at Guănăjūātŏ. The family of Săr̆dănētă (Los Marqueses de Rayas), takes it rise from the mine of that name. Cātă and Mĕllādŏ gave to their first proprietor (Don Francisco Matias de Busto) the Marquisate of San Clemente, with immense wealth, a part of which has been transmitted to his descendants. The Cañada of Laborde, at Tlalpujahua, with the mines of Quĕbrădīllă and San Ăcāsĭŏ, at Zăcătēcăs, all contributed towards the three fortunes of Laborde. The family of the Ŏbrĕgōnĕs owes its beautiful estates, (near Leon,) to the mines of La Purisima, and Concepcion, at Catorce; as does the family of Gordoa, the estate of Malpasso to the mine of La Luz. The son of Zămbrānŏ, (the discoverer of Guărīsămēy,) wasted as his rightful property has been, is still in possession of four of the largest estates in

Dŭrāngŏ: and Bătŏpīlăs gave to the Marquis of Bŭstămānte, both the means of purchasing his title, for which he paid by a loan of 300,000 dollars, (60,000*l.*) to the Royal Treasury, during the Revotion, and the affluence which he is now enjoying in the Peninsula.

The above is a most imperfect sketch of the origin of the fortunes of the leading families in Mexico. With some few exceptions, such as the Conde de Āgrĕdă, whose fortune was made by trade, the descendants of Cortes, who received a Royal grant of the Valley of Ŏăxăcā, (the value of which is now much reduced by the abolition of the Indian Capitation tax,) and the families of some of the Spanish merchants established at Jălāpă and Vĕrăcrūz, it will be found that almost the whole landed property of the country is in the hands of Mining families, and has, in a great measure, been brought into cultivation by the mines. They furnished the means of building the vast Presas de Agua, or Reservoirs, without which agriculture can so seldom be carried on successfully upon the Table-land; and thus rendered productive districts, the fertility of which, had nature not been assisted by art, would never have been developed; while the constant demand, in the Mining towns, for every article of agricultural produce, rendered this mode of investing capital preferable to any other then open to a Native. The Civil War has, indeed, reduced almost to nothing the value of these possessions, and there is little, at pre-

sent, to demonstrate the wealth, to which, under more favourable circumstances, the principal families of the Republic will find themselves restored: but time alone is wanting in order to bring things round to their natural level; the seeds of opulence are there, and, in proportion as the country advances towards a more settled order of things, the period approaches, at which they may be again expected to produce their former fruits.

Melancholy, indeed, would be the fate of Mexico, if the source from which all her riches have hitherto been derived, were, as some suppose, exhausted and dried up! She could not only find no substitute for her mines in her Foreign Trade, of which they furnish the great staple, Silver, but her resources at home would decrease, in exactly the same proportion as her means of supplying her wants from abroad. Her Agriculture would be confined to such a supply of the necessaries of life, as each individual would have it in his power to raise;—Districts, formerly amongst the richest in the known world, would be thrown for ever out of cultivation;—the great Mining towns would become, what they were during the worst years of the Revolution, the picture of desolation; and the country, would be so far thrown back in the career of civilization, that the great majority of its inhabitants would be compelled to revert to a Nomade life, and to seek a precarious subsistence amidst their flocks and herds, like the Gaucho of the Pampas, of whose Indian habits Captain Head

has given us so spirited, and so faithful a picture. I desire no better proof of this than the contrast, which exists, at the present day, in every part of New Spain, between the degraded situation of the husbandman, or small landed proprietor, in any district without an outlet, and that of a proprietor, (however small,) in the vicinity of the mines. The one, is without wants, and almost without an idea of civilized life; clothed in a leather dress, or in the coarsest kind of home-made woollen manufactures; —living in primitive simplicity perhaps, but in primitive ignorance, and brutality too;—sunk in sloth, and incapable of exertion, unless stimulated by some momentary excitement: while the other, acquires wants daily, with the means of gratifying them; and grows industrious, in proportion as the advantages which he derives from the fruits of his labour increase; his mind opens to the advantages of European arts; he seeks for his offspring, at least, that education which had been denied to himself; * and becomes, gradually, with a taste for the delights of civilization, a more important member, himself, of the civilized world! Who can see this, as I have seen it, without feeling, as I have felt, the importance, not only to Mexico, but to Europe, of a branch of

* Amongst the young Mexicans who have been sent to England, or the United States, for their education, I could mention several from the Mining districts, as the sons of Don Narciso Anitua, at Sombrerete, and those of the principal Agent of Count Regla, at Real del Monte.

industry capable of producing such beneficial effects? And *alone* capable of producing them; for Mexico, without her mines, (I cannot too often repeat it,) notwithstanding the fertility of her soil, and the vast amount of her former Agricultural produce, can never rise to any importance in the scale of nations. The markets of the Table-land must be *home*-markets, and these the mines alone can supply. On the Coasts, indeed, the productions of the Tropics, which we term Colonial Produce, might serve as an object of barter; but these, supposing their cultivation to be carried to the greatest possible extent, could never cover the demand upon European industry, which the wants of a population of eight millions will, under more favourable circumstances, occasion, as their value must decrease in proportion to the superabundance of the supply, until they reach the point, at which their price, when raised, would cease to repay the cost of raising them. Thus the trade of Mexico would be confined to her Vanilla, and Cochineal, (of which she has a natural monopoly;) while the number of those who consume European Manufactures in the Interior, (which does not yet include one half of the population,) would be reduced probably to one-tenth. Fortunately, there is no reason whatever to apprehend the approach of that scarcity of mineral productions, with which many seem to think that New Spain is menaced. Hitherto, at least, every step that has been taken in exploring the country, has led to fresh indications of

wealth, which, in the North, appears to be really inexhaustible. To the European manufacturer, it is a matter of indifference whether the silver, which is transmitted to him in return for the produce of his labour, proceeds from Guănājūātŏ, or Dŭrāngŏ, from the centre of the Table-land, or the fastnesses of the Sierra Madre. The capability of the country to produce it in sufficient quantities to ensure a constant market, and an equally constant return, is the only point which it can be of importance for him to ascertain; and of this, from the moment that a sufficient capital is invested in mining operations, I have no scruple in stating that there can be no doubt.

Mining in Mexico has, hitherto, been confined to a comparatively narrow circle: the immense mass of silver which the country has yielded since the Conquest, (Humboldt calculates it at 1,767,952,000 dollars, in 1803,) has proceeded from a few Central spots, in which the capital and activity of the first speculators found ample employment: yet, if we examine those spots, we shall find that three centuries of constant productiveness, have not been sufficient to exhaust the principal mines originally worked in each, while by far the largest proportion of the great Veins remains unexplored. This is the case at Guănājūātŏ, with the mines of Cātă and Rāyăs, and at Zăcătēcăs, with those of San Ăcāsĭŏ and San Bĕrnābē,—all of which now belong to the United Mexican Association. Valenciana is a more

recent discovery, but Mĕllādŏ, (likewise at Guănăjūātŏ,) which belongs to the Anglo-Mexican Company, is supposed to have been the first mine denounced in that district. At Sōmbrĕrētĕ, the Vein of the Păvĕllōn has been worked from the time of the Conquest, though it was only in the year 1792 that it produced the famous Bonanza of the Făgŏāgăs. The mines of Santa Eulalia, in Chĭhūāhŭa, continued to be equally productive during a period of eighty years, and were only abandoned at last in consequence of the incursions of the Indian Tribes.*

The riches of Real del Monte can hardly be said to have diminished in a term of sixty years, although the difficulty of the drainage caused the works there to be suspended.† The same may be said of Bolaños, which is likewise in the hands of one of the English Companies; (*Vide* Section II.)—and although, in some of the inferior districts, many smaller veins have been worked out, we have to set against this the immense regions hitherto unexplored, or if examined, only sufficiently so to afford some faint indications of the riches which they are now known to contain.

There is, therefore, so little reason to question the

* *Vide* preceding Section.

† Count Regla possesses an account, given upon oath by the miners employed in 1801, of the state of the lower levels, at the time when the mines on the Biscaina vein were given up, by which it appears that the richness of the vein continued unimpaired.

producing powers of the country, that, were it necessary to adopt one of two extreme suppositions, there would rather be cause to fear a depreciation in the value of our present circulating medium, from the probability of too great an increase in the average annual produce, than to apprehend any great falling off in its amount. But the progress of discoveries, as we have seen, is liable to be influenced by a thousand circumstances, unconnected with the mines themselves: any great change, in either sense, must be the work of time; and occupied as the Companies now are by extensive undertakings in the more Central districts, it seems probable, not only that the former standard of twenty-four millions per annum will not be reached before the year 1835, but that, while the mines of the South continue to be sufficiently productive to repay the Adventurers, capital will not be employed to any great extent in the less accessible districts of the North, to which, as I have already stated, I am induced to attach the greatest importance.

On the other hand, it may be urged that the Trade which is now opened with Asia, through the ports of Măzătlān and Gūāymăs, will hold out great encouragement to speculations in that quarter, by the facilities which it affords for turning to immediate account riches, which were formerly of (comparatively) but little advantage. All the luxuries of life may now be obtained with as much ease by the inhabitants of the Provinces on the Pacific, as by

those of the Capital itself; and there can be little doubt that, in proportion as wealth becomes more desirable, it will be more eagerly sought. It is therefore difficult, after allowing a reasonable time for these causes to operate, to suppose that they will not produce their natural effects; in which case I am certainly inclined to think that a very considerable increase in the amount of silver raised in Mexico, may be expected to take place; although it is impossible now to fix the period at which this change will occur, and still more so, to ascertain the extent to which it may ultimately be carried. It is sufficient for the commercial nations of Europe to know that, from the moment that the internal affairs of New Spain assume a more settled character, and that sufficient time has elapsed to allow the new institutions to take root, there is every prospect of an increase in the demand for every article of European manufacture, while that very increase in a country, the revenue of which depends so much upon the customs,* will augment the power of the Government to meet its engagements abroad.

It may, and I fear it will, be said, that the chain of evidence is here incomplete, and that I am assuming a fact favourable to Mexico in the first instance, in order to draw from it my own conclusions afterwards. This is by no means my wish; but, at the same time, I confess that, (in common, I believe,

* *Vide* Section V. of Book III.

with all those who have had an opportunity of inquiring into the resources of New Spain,) I do regard it as so well ascertained a fact that her mineral riches are almost unexplored, that I am willing to rest upon it my whole calculation with regard to her future importance as a country. I have not formed this opinion hastily, or without endeavouring to collect all the data respecting it, that it is possible to obtain in the present unsettled state of the country; but having formed it, (whether correctly or erroneously, time alone can determine,) I cannot lay it aside at pleasure, in an investigation, the result of which it must materially influence. I need not, however, remind my readers, that I am here only canvassing probabilities, nor again urge upon their attention the fact, that, whatever be the capabilities of the country, their developement depends upon the general course of events, which may advance or retard the moment, at which the extent of the resources of Mexico can alone be fully known.

I shall now quit a part of my subject; upon which so much uncertainty necessarily prevails, and revert to one that admits of a more accurate investigation, viz. the immediate influence of the mines upon the commercial demand, with a few observations upon which I shall beg leave to close this Book.

In an extensive Mining Negotiation, one-half of the annual produce may be fairly taken as the amount brought into circulation in the country by the expences of working. This half is distributed,

partly amongst the superintendents, and labourers in the mines, and partly amongst the landed proprietors of the surrounding districts, each, and all of whom, it enables to become consumers of something more than maize-cakes, and home-spun cottons, by bringing within their reach a portion of those Imports, with which the American market is supplied by European ingenuity. Of the facility with which a taste for European productions is acquired, the total downfall of the native manufactures of wool and cotton, in the short space of four years, is a sufficient proof. I have not the means of tracing the exact amount of the consumption of British manufactures in each of the Mining districts, but it is certain that, wherever a company has been established, shops have been opened, and regular supplies of goods drawn from the Capital, or the nearest port, not one-fiftieth part of which could have been disposed of, had the Mines continued unworked. The streets of Guănājūātŏ, Sōmbrĕrētĕ, and Zăcătēcăs, are full of large magazines; there is a constant communication between Cătōrcĕ and Rĕfūgĭŏ; as there is between the Mining towns of Sŏnōră and Cĭnălōă, and the ports of Măzătlān and Gūāymăs.

At Real del Monte, I was assured that the change which had taken place, in fourteen months, in the appearance of the population, was really wonderful; and at Tlālpŭjāhuă, which, in 1825, was a ruined mountain village, Mr. de Rivafinoli, (the Director of the Company established there,) informed me that

the Alcavala, (or Excise,) which, on his first arrival, amounted only to 250 or 300 dollars per month, had risen to 1,500, and 2,000 dollars; and that a shop for the sale of European manufactures had been opened there, by the house of Green and Hartley, the monthly receipts of which amounted to six thousand dollars. If we reflect that the money thus brought into circulation is not confined to the Districts, in which I have described its more immediate effects, but extends, more or less, over the whole country, by giving a value to Wheat, Maize, and Barley, hides, tallow, Pita-ropes, coarse sacking, with cattle, sheep, mules and horses, from the great breeding estates in the North, and that all those who are thus enabled to dispose of their own stocks, become instantaneously consumers of ours, it will be seen that the investment of capital, by which this change has been promoted, has not only not been injurious to England, but that, in point of fact, a large proportion of the fifteen millions of dollars, at which I have estimated the investments of our Companies, has already returned to us, in the shape of remittances to our manufacturers at home.

As the Mines improve, these remittances will increase: we have, at present, but little more than the proceeds of that capital, by which the regeneration of the mines is to be effected, in conjunction with a produce, not exceeding one-*third* of the average standard before the Revolution. When the mines begin to pay, the case will be very different; for, in

addition to the *half*, which I suppose to be absorbed by the expences, one moiety of the remaining half will go to the Mexican proprietor, and consequently remain in the country, until it is exchanged there for the produce of European industry.

Upon the amount of that produce consumed, the most important branch of the Revenue depends; and it is to the increase or diminution of the Revenue again, that the creditors of Mexico must look for regularity in the payment of the interest due upon the loans contracted in this country.

Of the ability of Mexico to meet her engagements, under moderately good management, I entertain no doubt; nor would any temporary fluctuations in her receipts or commerce, affect my opinion of her resources. It would be melancholy, certainly, were the bountiful intentions of Nature to be frustrated, by civil dissensions, or by injudicious legislative interference; a little tendency to which will, probably, long remain in all the countries formerly subject to Spain; but my visit to the Interior of Mexico taught me to believe, that the party spirit, which rages occasionally in the capital, ought not to be taken as a criterion of the general feelings of the inhabitants; and to hope, that few causes in fact exist, by which the general tranquillity of the country is likely to be again disturbed. Of those causes, in a work of this nature, I am not at liberty to speak; I shall, therefore, proceed at once to what I must term, in the usual phrase of the day, my Personal

Narrative, which will contain some account of my first and second visits to Mexico, (in the autumn of 1823, and January 1825,) together with my subsequent journeys to the Mining Districts, (in 1826, and 1827,) in which I shall endeavour to include all the statistical details, of any interest, respecting the different parts of the country through which I passed, not comprehended in the preceding parts of this work.

ADDITIONAL REMARKS.

SINCE the conclusion of my investigations with regard to the produce of the Mines, I have discovered that, from the number of Mints which were temporarily established during the first years of the Revolution, and afterwards suppressed by order of the Viceroy, of which little is known in the Capital, I have been betrayed into some slight inaccuracies, which, from information subsequently received, I am enabled to rectify.

For instance: I have not included in my general Table of Coinage, the Mints of Guănăjūātŏ and Sōmbrĕrētĕ, not being in possession of any returns from those places, and conceiving, consequently, that, while they remained in the hands of the Insurgents, (by whom the Mints were first established,) no account had been taken of the money coined in each, during the very short time that they were allowed to subsist.

I now find that, in Guănăjūātŏ, from December 1812 to May 1813, the Royal Authorities brought Hidalgo's Mint again into activity, and that 311,125 dollars were struck off on the Government account.

From 1821 to 1825, about two millions of dollars

more were coined, (2,170,454 dollars,) which ought, consequently, to be added to the 155,213,012 dollars, at which I have estimated the whole Coinage of New Spain, during the fifteen years immediately subsequent to the Revolution.

One million, five hundred and sixty-one thousand, two hundred and forty-nine dollars must likewise be added for the Coinage of Sōmbrĕrētĕ, where it appears that there was a Mint in full activity from the 16th of October, 1810, to the 16th of July, 1811.

The effect of this would be to render the Total Coinage of the fifteen years 159,255,840 dollars, viz.:—

	Dollars.
Amount given by General Table .	155,213,012
Coinage of Guanajuato, from December 1812 to May 1813 . .	311,125
Ditto from 1821 to 1825 . .	2,170,454
Coinage of Sombrerete . .	1,561,249
Total .	159,255,840

and this again, (with the deductions specified in the first Section,) would give 10,487,986 dollars, 5 reals, as the annual average of registered produce, since the Revolution, in lieu of 10,218,464 dollars, 6 reals, at which I have estimated it.

I merely state this for the sake of correctness, as it does not affect my subsequent calculations, in which I have taken as the basis a produce of Eleven millions.

Besides, the produce both of Guanajuato and Sombrerete, is given separately in the Table of Produce, as taken from official records.

I annex a General Table of the total Coinage of all the Mints of Mexico, including that of the Capital, from the year 1733, when it was first placed under the direction of the Government, and returns of the annual coinage regularly kept.

By this it will appear, that the sum of 1,435,658,611 dollars has been *registered* as the produce of the mines of Mexico in ninety-three years, (from 1733 to June 1826.)

The work of Baron Humboldt enables me to add from Registers, which, but for his researches, would now have ceased to exist, (since not even the Mexican Government has been enabled to annex them to its official statements of the Mint Returns,) 272,514,825 dollars more, as the registered coinage of the Mint of Mexico from 1690 to 1733, with which year the present table commences.

This gives a produce of 1,708,173,436 dollars in a hundred and thirty-six years, and proves both the constancy of the producing powers of the country, and the moderation of Baron Humboldt's calculations with regard to them, since he estimated the amount of silver raised from the Mines of Mexico in 1803, (from the Conquest in 1521,) at 1,767,952,000 dollars, or, 2,027,952,000 dollars, if one seventh were added to the Official Returns for unregistered silver.

GENERAL TABLE OF COINAGE IN MEXICO.

The Mint of the Capital was established in 1535. Until the year 1733, when it was placed under the direction of the Government, there are no Returns.

		Dollars.
From 1733 to June 1826, the registered Coinage is:—		
In Gold - -	63,365,406	1,382,218,536 3 0
In Silver - -	1,318,853,130	
GUANAJUATO.		
From Dec. 1812, to May 15, 1813 - - -	311,125	3,024,194 0 0
From April 1821, to June 1826 - - -	2,713,069	
ZACATECAS.		
From Nov. 24, 1810, to June 1826 - -		32,108,185 1 6
GUADALAJARA.		
From 1812, to June 1826,		
In Gold - -	225,632 0 0	5,659,159 7 9
In Silver - -	5,433,527 7 9	
DURANGO.		
From 1811, to June 1826 -		7,483,626 4 0
CHIHUAHUA.		
From 1811 to 1814, when the Mint was suppressed - - -		3,603,660 0 0
SOMBRERETE.		
From Oct. 16, 1810, to July 16, 1811, when the Mint was suppressed - -		1,561,249 2 0
	Total	1,435,658,611 2 3

BOOK V.

PERSONAL NARRATIVE.

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SECTION I.

FIRST VISIT TO MEXICO IN 1823.—JOURNEY FROM VERA CRUZ TO THE CAPITAL.

In the autumn of 1823, I had the honour of being appointed a member of the Commission, which His Majesty's Government was about to send to Mexico, in order to ascertain the state of affairs in that country, the political separation of which from Spain had been announced to the world in 1821, by the treaty of Cōrdŏvă, and the subsequent elevation of Ĭtŭrbīdĕ to the imperial throne.*

The party was composed of Mr. Hervey, who was placed at the head of the first Commission, Mr.

* *Vide* Sketch of the Revolution, Book II.

O'Gorman, now His Majesty's Consul-General in Mexico, Mr. Mackenzie, who resided for some time as Consul at Jalapa, Mr. Thompson, Secretary to the Commission, Dr. Mair, and myself. Our voyage was monotonously prosperous; it is therefore only necessary to state that we embarked at Plymouth, on the 18th of October, 1823, on board His Majesty's ship Thetis, commanded by Sir John Phillimore, and anchored off the island of Sacrificios on the 11th of December, being prevented from entering the harbour of Vera Cruz, by the hostilities which had commenced, about two months before, between the town and the Castle of San Juan de Uloa.

On the passage we only touched at Madeira, where we passed four delightful days.

This island forms a connecting link between the Old and the New World, and possesses many of the characteristics of both. The curtain of vines, which extends over the whole face of the mountain above Funchal, and rises gradually to the foot of the eminence, upon which the Convent of Nuestra Señora de la Soledad is situated, is worthy of Italy or Andalusia; while the Interior recalls, at one moment, the volcanic remains so frequent in America, and at another, the striking scenery of Switzerland or the Tyrol.

This again contrasts singularly with the minor beauties of cultivation in the vicinity of the town: the trellices extending across the steep, paved road, the walls of which are covered with the Camellia

Japonica, the wild luxuriancy of the gardens, and the brilliant white of the houses glittering in the sun, with verandas sheltered from its rays by a large tree, or a cluster of bananas. The whole forms a scene which is not easily forgotten, and which was, perhaps, impressed the more forcibly on my mind, by its total dissimilarity to that which succeeded it —the gloomy sand-hills of Veracruz.

On the morning of our arrival at Sacrificios, I was commissioned by Mr. Hervey to go on shore in order to open our communications with the Mexicans. Not being aware that, since the firing from the Castle had commenced, the great gates of the town had been closed, and that all intercourse with it was conducted by a road from Mŏcāmbŏ Point, (nearly opposite to our anchorage,) we took advantage of a momentary silence in the batteries on both sides, and rowed straight for the pier-head, passing within a quarter of a mile of the Castle, the walls of which were covered with men. On reaching the mole we landed, and proceeded towards the gate at the farther extremity, where, after much delay, we succeeded in obtaining admission through a wicket, behind which we found a breastwork of sand-bags, and a few straggling soldiers, with an officer, who, on due explanation being given, conducted us to the house of General Victoria, at that time Governor of the Province, and Commander-in-chief of the Army employed in the siege of Uloa.

Nothing could exceed the melancholy appearance

of the streets through which we passed. A town entirely abandoned by its inhabitants, must be, at all times, a strange, and a mournful sight; but when to this unnatural solitude are added the marks of recent warfare, houses riddled with shot, churches half in ruins, and flights of vultures, congregating around the carcase of some dead animal in the streets, it is difficult to imagine a more striking picture of desolation.

Nor was there any of the military bustle which usually attends a siege, to enliven the monotony of the scene. The garrison of St. John of Uloa was so small, and the climate of Veracruz so dangerous, that the Mexican force consisted merely of men enough to work the batteries, which had been constructed in the hope of making some impression upon the Castle, the bomb-proof casemates of which would have bid defiance to any such attempt, had not hunger and disease lent their powerful assistance to the besieging force without.

I do not believe that we met with a single living creature from the sea-side to Victoria's house, where, to our great surprise, we found ourselves suddenly in the midst of loud and boisterous rejoicings. It was his Saint's day, (the day of the Virgin of Gŭadălūpĕ,) and all the officers of the garrison were dining with him, in order to commemorate it. Rather a fine band of music was playing in the Court; a number of dark, muscular-looking men were scattered carelessly around; and al-

though the appearance of many of them was sufficiently uncouth, still, both amongst them, and amongst the officers to whom we were afterwards introduced, there was some attempt at uniformity of dress, no traces of which could be discovered in the guard, by which we had been admitted at the gate.

Of the pleasure with which the intelligence of the arrival of a British Commission in Mexico was received by General Victoria, who came out in person to welcome us, it is needless to speak. Next to the Independence of his country, his first wish through life had been to see an intercourse established with England; and that wish was at length gratified! After a long conversation with him, he conducted us to the room where the officers were assembled, by whom we were received with deafening "Vivas:" the Band was stationed in the Corridor; toasts were given in honour of England, and her King; in which the happy coincidence of our arrival having taken place upon the day sacred to the Patroness of Mexico and of Guădălūpĕ Victoria was not forgotten. Some of the impromptus made by the officers upon this "feliz Casualidad," were clever, and the verses by no means ill turned; although their principal merit naturally consisted in conveying to us the feelings of the moment.

After making arrangements for landing our baggage at Mŏcāmbŏ, and receiving a promise that mules should be immediately provided for our conveyance

into the Interior, we returned to the boat, accompanied by a guard of honour, much superior in appearance to that which we had found upon duty, and took leave, at the gate, of our new friends. The last mark of attention with which they favoured us I should willingly have dispensed with, for wishing to honour us with a salute, on pushing off, they forgot that their guns were shotted, and directed against the Castle, which immediately opened its batteries in return, so that for some time we had the pleasure of finding ourselves between two fires. The balls and shells passed considerably above us, but we saw more than one strike the pier which we had just left, and many more bury themselves in the sands near a bastion at the Southern extremity of the town.

Notwithstanding General Victoria's wish to expedite our departure, several days elapsed before the arrangements for our journey could be completed. We found the greatest difficulty in procuring mules for our baggage, or horses for ourselves; for the trade of Veracruz having been transferred to Alvarado, a general emigration of the population had taken place, with the exception of a few sickly-looking families, which had established themselves in tents in the midst of what was once a wood of cocoa-nut trees,* a little beyond the range of the shells from

* The trees were all cut down, when Santana and Victoria were besieged in Veracruz by Iturbide's army, under the orders of General Echavarri.—*Vide* last Section of Book II.

the Castle. In the mean time a constant communication was kept up between the Thetis and the town, by the Mocambo road; Mr. Hervey and General Victoria exchanged visits, and on the 14th the whole Commission dined at the General's house, which, in the evening, presented a curious scene; for although there was not a woman in Veracruz, we had the music of all the regiments playing in the Patio, while the soldiers danced the Jărāvĕ, and other national dances, until a very late hour. A violent North-west wind came on about eight o'clock, which rendered it impossible for us to return on board to sleep, but General Victoria provided us all with beds, and during the night the gale abated sufficiently to enable us to reach the Thetis after breakfast the next morning. We there made our final preparations for landing, and got the last of our baggage on shore, in the hope of being able to commence our journey early on the 16th; but the long expected mules did not arrive till late, and when they did come, such was the confusion which ensued amongst the muleteers in parcelling out boxes and packages, very few of which were intended for the back of a mule, that although we were at work from six in the morning, it was four in the afternoon before we succeeded in getting fairly into marching order. I was at one time very much inclined to throw up the task of superintendence in despair, for with fifty baggage mules, and three English carriages, each drawn by seven wretched animals, to

marshal, I saw no hope of ever leaving the beach. None of our English servants were of the slightest use, as, with the exception of mine, who had been four years with me in Spain, they spoke no Spanish; but had they been perfect masters of the language, it would have been of little avail, for neither remonstrances, nor persuasion, nor abuse, produced the least effect upon the lawless set by which we were surrounded. Nothing but the very dregs of the population had remained in Veracruz, and out of these, of course, our muleteers and coachmen were selected. They were almost all blacks, or descendants of blacks, with a mixture of Indian blood, and seemed either never to have known the restraints of civilization, or, at all events, to have lost sight of them amidst the wild scenes of the Revolution: whilst with us, they certainly acknowledged no superior but the Corporal of the escort, whose sword, the flat part of which was applied without scruple to their backs, sometimes accomplished what it was impossible for any other mode of treatment to effect.

On quitting the beach with our whole caravan in marching order, we followed a path, which, after winding for about a league amongst the sand-hills by which Veracruz is surrounded, joined the road to Santa Fé, a village at which, although only three leagues from Veracruz, we had agreed to rendezvous, and pass the night. It was seven in the evening before I reached it, and eleven at night before the carriages appeared. I found them imbedded in the

sand about a league from Veracruz, with the coachmen stretched at full length by the side of their mules, and fast asleep; a measure to which our English servants told me that they had had recourse the very moment that a difficulty occurred in advancing. With the assistance of the guard, means were taken to awaken them; but seeing that it was useless for me to remain, I rode on, leaving a *sous officier*, and four men to bring them up; and rejoicing to think, that however necessary the carriages might prove in the Capital, all the members of our party were young, and active enough to be able to dispense with them upon the road. Even in the present improved state of the communications, they are a continual source of embarrassment on a journey, for English axletrees are not at all adapted to Mexican roads, and if a wheel or a spring be injured, there is no possibility of getting it repaired: but in 1823, there was hardly a single league between Veracruz and Pĕrōtĕ, in which some vexatious delay did not occur to make us regret that we had burthened ourselves with such incumbrances at all.

We found at Sāntă Fē the first specimen of the sort of accommodations that we were to expect on our journey through the *Tierra Caliente* of Mexico. The village was composed of five or six Indian huts, rather more spacious than some which we afterwards met with, but built of bamboos, and thatched with palm-leaves, with a portico of similar materials before the door. The canes of which the sides are

composed, are placed at so respectable a distance from each other as to admit both light and air: this renders windows unnecessary. A door there is, which leads at once into the principal apartment, in which father and mother, brothers and sisters, pigs and poultry, all lodge together in amicable confusion. In some instances, a subdivision is attempted, by suspending a mat or two in such a manner as to partition off a corner of the room; but this is usually thought superfluous. The kitchen occupies a separate hut. The beds are sometimes raised on a little framework of cane, but much oftener consist of a square mat placed upon the ground; while a few gourds for containing water, some large glasses for orangeade, a stone for grinding maize, and a little coarse earthenware, compose the whole stock of domestic utensils. We found, however, provisions in abundance; fowls, rice, tortillas, (thin maize cakes,) and pine-apples, with a copious supply of orangeade, furnished an excellent supper, after which we commenced our preparations for the night. We had all taken the precaution of providing ourselves with brass camp-beds, which, in America, are one of the necessaries of life: they pack into so small a compass that two of them make a light load for a mule; while, when put together, which requires but little time or trouble, they ensure to the traveller the means of resting after the fatigues of the day with every possible convenience and comfort. Above all, the musquito-net should not be forgotten; for

without it there are few parts of the New World in which those troublesome insects do not make such an example of a *nouveau debarqué*, as not only to deprive him of rest, but to throw him into a fever for some days. We put up our beds in the open air, under the shed which projected from the front of the inn, while Dr. Mair and Mr. Thompson, whose baggage was not come up, slung two cots, which they had brought from on board, to the rafters above us. Our horses were picketed close round the shed, with an ample provision of Zăcātĕ, (dried maize stalks;) the servants slept on the outside, wrapped up in cloaks, with our saddles for pillows; and beyond them again the men and horses of the escort were stationed, with a large watch-fire, and two or three sentinels, to prevent robberies during the night. Upon the whole, I have seldom witnessed a more curious scene, and we could none of us help remarking, as we contemplated it, that if this were a fair specimen of the introduction to American Diplomacy, there would be few candidates for the Missions to the New States amongst his Majesty's older diplomatic servants in Europe.

On the morning of the 17th of December, we quitted Santa Fé at about nine o'clock, having sent off the carriages and heavy baggage some hours before. Our day's journey was to be only twelve leagues, as we had been advised to sleep at Puente del Rey, a large village, celebrated as the scene of many a sanguinary engagement during the Revolu-

tionary wars; but although the ground rises but little in the intervening space, we found the greatest difficulty in advancing, from the extreme badness of the road, which was in many places a wilderness of sand. The carriage-mules knocked up, and the coachmen mutinied both at El Mănăntĭāl, and at Pāsŏ Ŏvējăs, two Ranchos, at each of which they seemed determined to pass the night; and although we forced them on, and left a guard with them at last, with strict orders not to allow them to stop, they did not reach the Puente until two in the morning. We arrived ourselves about dusk, with barely light enough to enable us to admire the beautiful scenery by which we were surrounded. The bridge which is thrown over the river Ăntīgŭa at this place is, like most Spanish works of this description, admirably constructed. The arches are of stone, and the bridge itself communicates with a causeway, which, on the one side, winds down a steep descent, and on the other, forms an elevated road, along which the huts, of which the village of the Puente is composed, are scattered amongst some large trees, at considerable intervals from each other. But it is on looking towards the Veracruz side that you are struck with the picturesque appearance of the bridge, for there you perceive most distinctly the curve in which its peculiarity consists; while the fine masses of rock that command it, and the rapid stream that runs below, forcing a passage over a thousand obstacles,

form a scene far superior to any that we had met with since our landing. Nothing can be more monotonous than the general character of the country from Veracruz to the Puente; the sand-hills do not indeed extend above three miles into the interior, but for some leagues there seems to be a struggle between vegetation and sterility. Patches of a rich and luxuriant green are intersected by long intervals of rocks and sand, nor is it until you reach Pāsŏ dĕ Ŏvējăs, that any thing like regular cultivation is discovered. There we passed the ruins of a large Sugar Hacienda, which had been abandoned during the Revolution, and saw evident traces of a rich and productive soil. But on leaving the river to which this fertility is due, we again found ourselves in a sandy desert, where little but the Mimosa was to be seen, except in spots where some apparently insignificant stream called into existence, at once, the luxuriant vegetation of the Tropics. In these we were quite bewildered by the variety of plants, all new to the European eye, and generally thrown together in such fanciful confusion, that the most experienced botanist would have had some difficulty in classing them; for, as each tree supports two or three creepers, the fruits and flowers of which bear no sort of proportion in point of size to the slender branches of the mother plant, it is not easy to distinguish them, at first sight, from the produce of the tree to which they cling. The air is quite perfumed at times with this

profusion of flowers, many of which are most delicately coloured, (particularly the varieties of the Convolvulus kind;) while the plumage of the birds, of which, in some places, the woods are full, is hardly less brilliant than the flowers themselves. Flocks of Parrots and Macaws are seen in every direction, with Cardinals, Cĕnsōntlĭs, or mocking-birds, and a thousand others, the names of which, in any language, I cannot pretend to give; Deer too, occasionally bounded across the road; but of the Jăgūārs, (Mexican Tiger,) and other wild animals, we saw none, although their skins are to be met with in great abundance. Throughout the *Tierra Caliente*, not one hundredth part of the soil has been brought into cultivation; yet in the Indian cottages, many of which I entered, I always found a plentiful supply of Indian Corn, Rice, Bănānăs, Oranges, and Pine-apples, which, though certainly not equal to those of the Havanna in flavour, seemed to us, when heated with travelling, a most delicious fruit. Of the Bănānă I am not an admirer; its taste reminded me of sweet pomatum, and I gave it up after a very short trial. All these fruits are produced, with little or no labour, on a spot of ground in the vicinity of the cottage, which, though apparently too small to support a single individual, is usually sufficient, with the addition of a few Frijoles, (beans,) and a little Chile from the Interior, to provide for the subsistence of the whole family. For this indeed, not much is required.

They seldom partake of animal food: their fowls supply them abundantly with eggs, and enable them, when sent to the market of the nearest town, to purchase a little clothing: this, however, the beauty of the climate, and a sufficiently primitive notion of what decency requires, enable them, in a great measure, to dispense with. If a horse be added to the establishment, which is indispensable where there is any mixture of white blood, the forest furnishes abundant pasturage, and it causes no additional expence. A saddle, and a Machete, a long cut and thrust sword, which is almost always worn, are indeed costly articles; but these are transmitted, as heir-looms in the family, from one generation to another; and the young man who obtains possession of such treasures, during his father's life-time, by any exertions of his own, may be said to have established his independence at once.

Friday the 18th, we quitted the Puente, where our accommodations had been very similar to those which we met with at Santa Fé, as we again bivouacked in front of the house, which was not nearly large enough to contain us. We took a last look before we set out at the bridge, and at the little eminence upon which Victoria had entrenched himself above. It is sufficiently precipitous to render any attempt to carry it by assault extremely difficult; but, as a military position, it is untenable; being liable both to be turned, and to be deprived of water, with which it is supplied from the river

below. Victoria experienced this when attacked by a regular force under Miyares, (as stated in the sketch of the Revolution,) against whom he tried in vain to maintain his ground: but as a strong hold in a Guerrilla war, the possession of Puente del Rey was of importance, by enabling the Insurgents to cut off the ordinary communication with the Capital, and to bid defiance to small detachments of the Royalist Troops. A sketch of the bridge and surrounding rocks will be found in the first Volume, which, though on a small scale, sufficiently indicates both the beauties and the difficulties of the Pass.

The distance from the Pūentĕ to Plan del Rio does not exceed six leagues, but we found, on arriving there, that our carriages were, as usual, so very far behind, that it was useless to attempt the ascent to the Ĕncērrŏ, which commences a little beyond Plan del Rio, without fresh mules. These there was no possibility of obtaining, so that we resolved to halt at once for the day. The luxury of an inn actually built of brick, and subdivided into a number of separate rooms, each with a door opening into the Patio, or Court, and, though without windows, whitewashed, and provided with a small table and a chair, reconciled us to the delay. Such indulgencies were quite unexpected.

There is a fine bridge at the Plan, thrown over a rapid stream, which, in the rainy season, would be impassable without it. It consists of a single arch

of very large dimensions, and, as at Puente del Rey, communicates with a line of causeway, which was formerly a part of the great paved road constructed at the expence of the Merchants of Veracruz. There are nothing but fragments of this road now in existence, one of which extends for about two leagues into the interior from Puente del Rey. The remainder was either broken up by the contending parties during the Civil War, or allowed to go to ruin for want of repairs; a constant necessity for which is created by the impetuosity of the mountain torrents during the rainy season.

The village of Ĕl Plān, at the time of our visit, was very healthy, but it is within the range of the Vomito, or Veracruz fever, of which I shall have occasion to speak hereafter, and is consequently by no means a safe residence in the hotter months. From November to April, the only inconvenience to be apprehended are the sand-flies, which are quite insufferable. They are so small that no Musquito-net will exclude them, and bite with such sharpness that a small drop of blood is usually the first indication of their having settled upon the hand or face. Fortunately, they differ from Mosquitos in one respect, as they disappear at sunset, a peculiarity to which travellers are indebted for a chance of sleep, which they could not otherwise enjoy.

On leaving Plan del Rio, (December 19,) the ascent to the Table-land of Mexico may be said to commence. The elevation of the Plan above the

level of the sea is very trifling, but in the six leagues which intervene between it and the Encerro, the height of 3,043 feet is attained, which is sufficient to give an entirely new character to the climate and productions. The air becomes considerably rarefied; the fruits and flowers of the Tierra Caliente disappear; and the Mimosas are replaced by the Mexican Oak; which, in the summer season, must be a welcome sight, as it is supposed to indicate to the traveller his arrival in those more healthy regions, where, if he has not brought infection with him, he hás no longer any danger from the Vomito to apprehend. With the exception of this change, for which Humboldt's work had prepared us, we met with little worthy of remark on the road to the Ĕncērrŏ, where we stopped to breakfast, and to allow time for our carriages to come up. We found great reason to rejoice at not having been tempted to select it for our quarters on the preceding night, as the house was small, and incommodious, combining all the disagreeable smells peculiar to a Spanish-American shop, of which Tăsājŏ (dried beef,) and garlic are usually the most agreeable, with a great appearance of dirt, which we should have been unable to avoid by sleeping in the open air, as the change of climate was already sufficient to render the shelter of a roof indispensable. As some compensation, the distant view of Ŏrĭzāvă and Pĕrōtĕ, from the door of the inn, was very fine, as was that over the vast

extent of country which we had traversed on our way from the coast.

As soon as our carriages arrived, we proceeded in the direction of Jălāpă, where we understood that some preparations had been made for our reception. After a continued ascent of about two hours, over a rugged and dangerous road, we reached the platform upon which the town stands, and pursued our course along a piece of the old Veracruz causeway, through fields of maize, and gardens, following each other in rapid succession, sometimes surrounded with hedges of the Banana and the Aloe, interspersed with Chĭrĭmōyăs, and a thousand other trees; and at others by a light cane fence, which just enabled us to perceive the variety of the flowers in which the houses were almost buried within. At a little distance from the town we were met by several officers on horseback, who had been deputed to receive us, and by whom we were conducted to a house which had been prepared for us in the principal street, where we found the Governor, with some of the principal members of the Ayuntamiento: a dinner was in readiness, to which we all sate down in great state, with a band of music at the door: servants were placed at our disposal; and a *mayor domo*, or *Maître d'hotel* was presented to us, who, we were informed, had orders to furnish every thing that we could possibly want during our stay. In short, nothing could be more gratifying than our reception: the streets

were full of people as we passed, and, although the "*Vivas*" with which they saluted us proved that they had rather an indistinct idea as yet of our real character,* they at least showed that we were hailed as no unwelcome guests.

It was, indeed, a new epoch in the history of America that commenced with our arrival. It was the first step towards that growing intercourse with Europe, the importance of which to them, and to us, will be every day more generally felt; and as such, it justified the enthusiasm with which the resolution of His Majesty's Government was received on both sides of the Atlantic, before the evils, to which an unbridled spirit of speculation gave rise in this country, taught the disappointed to ascribe to this wise policy the misfortunes, which were to be attributed solely to their own folly.

We remained three whole days at Jălāpă, in hourly expectation of the arrival of carriage-mules, which had been sent for to Lă Pūebla, as it was impossible for us to proceed any farther with those which had brought us with so much difficulty from Veracruz. At last they came, and on the 24th we recommenced our journey. We had had ample opportunity in the mean time to admire both the beauty of the scenery in the environs of Jălāpă, and the hospitality of the Natives. All the Creoles eagerly sought

* Vivan los Embajadores de la Europa! (Long live the Ambassadors of Europe!) was, if I recollect right, the most general cry.

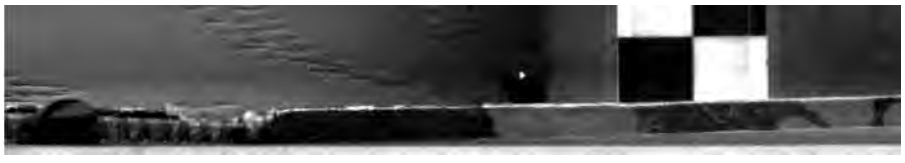
our acquaintance, and omitted nothing that could render our stay agreeable; but of the Old Spanish Veracruz merchants, we did not, I believe, see one. This was bad policy on their part; for although it was natural that they should give up their hold upon the country with reluctance, still, to show it, was only to afford their enemies a pretext for those violent measures, by which their expulsion from the Republic has been since attempted. No one laments this violence more than myself: it is discreditable to Mexico, inasmuch as it is a violation of the public faith, which was pledged to the Spaniards by the Declaration of Iguala, for the security of the persons and property of all such as chose to remain; and it is disadvantageous to the general interests of the State, by draining it of the capital which the civil war has left, and which was barely sufficient in 1827 to give activity to trade: but at the same time justice bids me add that it was hardly possible that any amalgamation of interests, so directly opposed to each other, should permanently take place. Very few of the Spaniards could learn to treat as equals, men, over whom they had so long exercised almost absolute authority; many betrayed this feeling in the most unguarded manner; and their imprudence contributed not a little to increase that irritation, on the part of the Creoles, which had taken but too deep a root during twelve years of civil war. It is lamentable, however, to reflect upon the number of respectable and useful men, who will be involved in

the common ruin. But let me return from this digression.

Of the country about Jălăpá it is impossible that any words should convey an adequate idea. It stands in the very centre of some of the finest mountain scenery that the world can boast of. Nothing can be more spendid than the Peak of Ŏrĭzāvă, when the veil of clouds, which but too frequently conceals it during the day, yields to the last rays of the glorious setting sun. Such a sunset, and such a mountain, can only be seen beneath the Tropics, where every thing is upon a gigantic scale, and where, from the purity of the atmosphere, even the flood of light from above seems proportioned to the magnitude of the objects upon which it is poured forth.

Ŏrĭzāvă is 17,375 feet above the level of the sea: it is connected by a long chain of intervening mountains with the Cōffrĕ de Pĕrōtĕ, (so called from a mass of rock in the shape of a chest, which distinguishes the crest of the mountain,) and the two together form a beautiful termination to the view in the direction of the Table-land. The Coffre is nearly 4,000 feet lower than Ŏrĭzāvă, and looks quite diminutive when the Peak is visible at the same time, although when not seen together, the eye rests with satisfaction upon so magnificent an object.

On the sloping ground, which descends from the foot of Ŏrĭzāvă to the sea, are situated the towns of Cōrdŏvă and Ŏrĭzāvă, which are celebrated for the



tobacco and coffee raised in their vicinity. The same district produces the best Vanilla, as well as the Jalap, and Sarsaparilla, which have been mentioned amongst the exports of Veracruz. A few Indian villages are scattered over this rich country, in every part of which but little exertion is required on the part of man in order to draw a subsistence from the exuberant fertility of the soil. Immense forests occupy the intervening spaces, abounding in every variety of timber, but rarely visited, except by the Indians, at the season for collecting the crop of Vanilla: they are watered by the streams which descend from the slope of the Cŏrdĭllĕră, and produce, during the greatest part of the year, the fruits of the Tropics in such profusion, that Victoria subsisted upon them almost entirely, during the eighteen months which he passed there, without seeing a human being. There are many indications of their having possessed a much larger population at the time of the Conquest, as the ruins of towns, and fortifications, have been discovered, which could only have been raised by very numerous Tribes: but, like every thing connected with the Indian race, their history is wrapped in obscurity, and with regard to some, not even a tradition now remains.

Jălāpă is indebted to the peculiarity of its position for the extreme softness of its climate. The town stands upon a little platform 4,335 feet above the level of the sea, and would consequently be even more exposed than the Encerro to the North-west

winds, which have the effect of stunting the vegetation both above and below this favoured spot, were it not protected from their violence by an intervening ridge of mountains; while this being exactly the height, at which the clouds suspended over the ocean touch the Cordillera, there is a constant humidity in the atmosphere, which gives a balmy feel to the air, and a delightful freshness to every thing around. After climbing the tedious ascent from Plan del Rio, nearly the whole of which lies through a dreary and monotonous country, the little declivity which forms the last mile and a half of the approach to Jălāpă, seems at all seasons a paradise: but its beauty vanishes the instant that you wander beyond the limits of the enchanted ground. This is more particularly the case on the ascent towards the Table-land, which becomes excessively steep almost immediately after leaving Jălāpă, and continues uninterruptedly so as far as Lăs Vīgăs. The distance between the two points does not exceed eighteen miles, while the difference of elevation amounts to 3,485 feet; we were therefore prepared to expect a great change of temperature, although we were far from calculating upon a transition so sudden and so complete, as that which we experienced.

We left Jălāpă about twelve o'clock on the morning of the 24th of December, with a cloudless sky, and the Thermometer at 70°; but before we got half-way to Lăs Vīgăs, a Norte came on upon the coast, and in an instant we found ourselves enveloped

in clouds, which, both in appearance and effect, strikingly resembled a November Scotch mist. Our cloaks proved insufficient to keep out the chilling cold; and as to the moisture, we soon found that our only chance was to push rapidly on, wherever the road would admit of it, by which means we contrived to reach our quarters for the night without being entirely wet through. The change in the scenery about us, was, in every respect, equal to that which had taken place in the atmosphere. At a very early period of the day we lost sight of the gardens of Jálăpă; and although hedges planted with Chĭrĭmōyăs extended about a league beyond the town, they soon gave place to plants of a hardier growth. These again gradually yielded to the Mexican Oak, and latterly even that to the Fir, which reigned for the last few miles in solitary pre-eminence. The light bamboo cottages of the Indians, which, notwithstanding my objections to them as places of accommodation on the road, were pretty and fantastic, were replaced by buildings of a more solid structure, and consequently better adapted to the climate, but without any pretensions to beauty. I thought them very like the houses in parts of Sweden, and particularly in Dalecarlia, which are composed of unhewn trunks of trees, rudely fastened together, and surrounded with inclosures, twelve feet high, to protect the cattle against the wolves. But still, in the midst of this ungenial scene, there are many features that remind the traveller of the singular

character of the country, through which he is passing. About two leagues from Las Vigas, there is a district covered with vesicular lava: the ground is strewed as far as the eye can reach with masses of black, calcined rock, the appearance of which evidently announces their volcanic origin. In some places these masses are of an enormous size; in others, they look as if they had been pulverized by some gigantic steam-engine; but in all, it seems as if but a few years had elapsed since the eruption which produced them took place, although not even a tradition with regard to its date is now in existence.

We found the Old Veracruz causeway in a sufficiently good state of preservation between Jălāpă and Lăs Vīgăs, to afford an easy passage even for carriages; the horses and mules, however, suffer exceedingly in the steeper parts of the ascent, from the difficulty of getting a good footing on the hard pavement. After passing through the villages of Lă Crūz dĕ lă Cūestă, Lă Hōyă, and Săn Mĭgūel ĕl Sŏldādŏ, between which we had been taught to expect some picturesque scenery, which the mist prevented us from perceiving, we reached Las Vigas about dusk, where we found very comfortable quarters prepared for us in the house of the Cura, and obtained a sufficiency of fowls to furnish a tolerable supper. No other meat was to be procured in the village, or bread; but our carriages came up in time to supply us with the last, as well as with some pine-

apples and Chirimoyas, of which a stock had been laid in at Jălāpă. The Chĭrĭmōyă is a fruit unknown, I believe, in Europe: in size it is larger than the largest Orange; the rind is green, and full of little inequalities, but the pulp is a beautiful white, of such delicacy that it must be eaten with a spoon, as it assumes a rusty tinge if cut with a knife: the flavour is that of the strawberry, combined with other fruits.

I seldom recollect suffering more from cold than I did at Las Vigas: we probably felt the severity of the weather the more from having been relaxed by a month of unusually hot weather on our passage from Madeira to Veracruz. The inhabitants are but little affected by it; for although the rooms are boarded, and some precautions taken to exclude the air, a fireplace is a thing unknown; and even the Spanish brasero seems not in common use. There was, however, something more than imagination in our chilliness; for at seven the next morning the thermometer was at 41°, (about 30° below the temperature of Jălāpă,) and the ground during the night was covered with a white frost. Our horses, many of which had been bred in the *Tierra Caliente*, suffered even more than ourselves; for although we succeeded in procuring stabling for them, they were perfectly stiff with cold in the morning, and did not recover the full use of their legs until half the day's journey was concluded.

The road from Lăs Vīgăs to Pĕrōtĕ is very steep

and bad. It was once nearly completed, at the expence of the Veracruz Consulado, in the same magnificent style as the rest of the causeway; but not a vestige now remains of their labours. During the Civil War, the ground between Jălāpă and Pĕrōtĕ was obstinately disputed by the Insurgents, who, in their attempts to cut off the communication between the Capital and the Coast, destroyed every part of the road that was not actually in the possession of the Royalist forces, which were stationed in considerable numbers at Jălāpă. Hence the marks of devastation, which commence at an equal distance above and below the town. We were four hours in reaching Pĕrōtĕ on horseback, although the distance is not above four leagues; and as to the carriages, we left them, as usual, far behind. The road winds almost continually through a pine forest, with occasional clearings, the fences round which serve to show the little value that timber possesses in these districts, as they are constructed with whole trunks of trees piled lengthways, one upon another, in wasteful profusion. These symptoms of the presence of man increased as we approached Pĕrōtĕ. After passing the village of Crūz Blāncă, we passed two large Haciendas, or Farms, surrounded by extensive fields of wheat, barley, and Indian corn, which, when the crop is on the ground, may, I dare say, justify Humboldt's description of their beauty. When we saw them, they had assumed the monotonous colouring peculiar to the Table-land during

the dry months; and there was, consequently, but little to attract the attention or gratify the sight.

Pĕrōtĕ, San Juan de Ulua, Acapulco, and San Blas, being the only fortresses which the Vice-royalty of Mexico contained, we were curious to see a place to which the Natives appeared to attach no little importance, and naturally conceived that it would be so situated as to command some one of the principal mountain-passes, through which an invading army would endeavour to penetrate into the Interior. We were disappointed, therefore, at finding the Castle placed beyond the last ridge of the mountains, upon the borders of one of those immense plains, which extend, almost without interruption, for fifty miles in the direction of the Capital. It is, in fact, a mere depôt for arms and bullion; for, although regularly fortified with four bastions and abundance of heavy artillery, it is too small to be of importance, and would probably not be taken into account at all by an enemy's force on its march towards the Central Provinces. The town, which lies about half a mile from the fortress, consists of one long street, with flat-roofed houses, seldom rising above the ground-floor, low windows, mostly without glass, and whitewashed walls. It affords, altogether, a fair specimen of the style of architecture which the Spaniards have introduced into all their American Colonies, where, with the exception of the Capitals, houses of two stories are seldom seen. We were received with great hospi-

tality by the Governor and Officers of the garrison, but proceeded almost immediately to the village of Tĕpĕyăgūalcŏ, (about seven leagues farther on,) which we reached a little before dusk.

Pĕrōtĕ may be regarded as the Eastern extremity of the Table-land: it is situated 7,692 feet above the level of the sea, and as it is but little protected from the North-west winds, its climate is at times exceedingly severe. In the immediate vicinity of the town, the ground is fertile, and the Cerealia succeed remarkably well; but as you advance into the Interior, the sterility of the soil increases at every step. The pine-forests are confined entirely to the mountains; they cease to thrive upon the tracts of flat country by which the ridges which intersect them at intervals are separated from each other. These form a succession of basins, which evidently must have been, at some former period, extensive lakes. The action of the water upon the foot of the mountains, by which these basins are environed, is distinctly visible, and you can even trace the line to which it appears to have risen. It seems to have partaken of the nature of that of the Lake of Mexico, for, in receding, it has left the ground covered with a thick coat of Tequesquite, or Carbonate of Soda, which is gradually destroying every trace of vegetation. The whole plain already produces only a scanty supply of food for the flocks of sheep which are occasionally seen wandering over it; and as the water that still remains is brackish, and grows every

year more scarce, it is probable that the district will ultimately become a desert.

I hardly know any thing more gloomy than the ride from Pĕrōtĕ to Tĕpĕyăgūalcŏ; the uniformity of the scene is only broken by little hills which start up abruptly every here and there, covered with the Aloe, the Cactus, and a few dwarf palms, which almost conceal the masses of lava of which they are composed. Upon the whole, we were none of us inclined to dispute the justice of the appellation by which this tract of country is distinguished, "*el Mal Pais*," although there are some redeeming points to which the European traveller may look back with interest, and even with pleasure. The first of these is the view of Ŏrĭzāvă, which is seen from this dreary plain to greater advantage than even from Jălāpă; and the second, the frequency with which specimens of "mirage" occur, in a degree of perfection which the great Sahara itself can hardly surpass. Prepared as we were for this optical illusion, we were more than once completely deceived by it, and fancied that we really saw before us a vast expanse of water, with trees, houses, and every surrounding object, beautifully reflected in it. The whirlwinds of sand too, which occasionally rise in majestic columns from the centre of the plain, were to me a novel sight; and we were all much struck with an insulated conical mountain, called El Cerro de Pizarro,* which had

* The outline of this mountain is given in the drawing of the Maguey, vol. I. Sect. III.

attracted our attention almost immediately after leaving Pĕrōtĕ, and which, on a nearer approach, we found to be composed entirely of masses of lava, so black and gloomy, as to give to the whole the appearance of having very recently emerged from the bowels of the earth.

The house in which we were lodged at Tĕpĕy-ăgūalcŏ, contained one large Sala, which served us for bed-room, dining-room, and every other purpose; in this, however, the whole extent of the accommodations consisted, for no provisions of any kind were to be procured, and the servants having neglected to lay in a stock at Pĕrōtĕ, we were reduced to very short allowance. Fortunately, we had a couple of cases of preserved meat with us, which we converted into soup, and this, with a few crusts of bread which were discovered in one of the carriages, saved us from a course of Tortillas and Chile, upon which the servants were dieted, *ad libitum*, as a proper recompense for not having been better purveyors.

Few people like this dish at first, although it constitutes the food of two-thirds of the population of Mexico. There is an unpleasant taste in the maize, to which, as well as to the extreme pungency of the Chile, it requires some time to get reconciled. I never learnt to eat it with pleasure, though I have sometimes had recourse to it in the absence of more palatable food.

After a most detestable breakfast, we set off, at an early hour on the 26th, for Nŏpălūcă, (a town about

twelve leagues from Tĕpĕyăgūalcŏ,) having taken the precaution of sending one of the soldiers of our escort in advance, in order to avoid, if possible, a second scarcity. Our road lay through a continuation of the plains which I have already described, where, with the exception of a few hawks and vultures, a wolf or two, and some Cŏyōtĕs, (a large kind of jackall,) which are always found prowling in the vicinity of a flock of sheep, not a living creature was to be seen. It was with considerable satisfaction that, about one o'clock, we crossed a little ridge of hills that forms the North-western boundary of the Mal Pais, and found that we were about to enter upon a less dreary scene. From this ridge, to El Ojo de Agua, a solitary inn, which takes its name from a fine spring of water that rises near the house, a sensible improvement took place. A few trees and Haciendas, with little patches of cultivation around them, broke, at intervals, the monotony of the view: we saw some large flocks of sheep, a cow or two, with some horses, and as we approached the stream to which these indications of fertility were due, we found ducks and other water-fowl in great abundance.

There is a singular view of Ŏrĭzāvă from the inn-yard at Ojo de Agua. The mountain stands exactly opposite the gateway, from which a long vaulted passage leads to the Patio, or court. This passage has the effect of confining the view in such a manner that the eye rests exclusively upon the

Peak, which appears, when thus seen, to stand alone, detached from the chain of inferior hills by which it is connected with the Coffre. In a clear day, the effect is very striking, as, from the purity of the atmosphere, the outline of this enormous mass is distinctly and sharply defined; but I should think it very difficult to transfer this effect to paper, so as to give any idea of the magnificence of the object. It is a natural picture as it now stands, and I should much doubt the power of art to do justice to it.

The boundary line between the States of Veracruz and La Puebla runs close to Ŏjŏ dĕ Āguă, in consequence of which the guard which had accompanied us from the Coast, was replaced by an escort of Lancers, which had been stationed there by the Authorities of Lă Pūeblă, to await our arrival. The men were remarkably well mounted and equipped, and in the officer, Don Juan Gōmĕz, we found a young Creole of gentlemanlike manners, and agreeable conversation, with whose society, during the rest of our journey, we were all much pleased. After passing an hour at the inn, where there were provisions in abundance to make amends for the scantiness of our morning fare, we proceeded towards Nŏpălūcă, observing with pleasure, as we advanced, that a number of little farms gave the surest possible indication of a more fertile soil. At Santa Ana, a village about two leagues from Ojo de Agua, we were received with great politeness by the Cura, an old man who came out to meet us

in his sacerdotal dress. Such an instance of courtesy towards heretics, was too remarkable not to be most gratefully acknowledged, and we remained for some time receiving and returning compliments, to the great edification of a crowd of by-standers, who all regarded us with intense curiosity. We did not reach Nŏpălūcă till dusk, when we found excellent quarters at the house of one of the Regidores of the town, Don Raymundo Gŏnsāleź, whose wife and three daughters were all employed in preparing supper for us, with their own fair hands. We were much pleased with the appearance of the town, which is clean and pretty: the houses are indeed, only built of Tapia, or rammed earth; but as the walls are kept white-washed, and in good repair, there is nothing to denote the humble materials of which they are formed. The land about the town is subdivided into a multiplicity of small enclosures, which it was quite pleasing to see once more, after the deserts over which our eyes had been roaming for two whole days. They indicated habits of industry, of which we had seen but few traces; for in the *Tierra Caliente*, it was rather the bounty of Nature, than the exertions of the inhabitants, that we had found cause to admire: their indolence seemed to increase exactly in the same ratio, as the facility with which their wants were supplied. But on the Table-land, the necessaries of life are not to be obtained without some efforts: the fertility of the soil is great, but it requires the hand of the culti-

vator to call it forth; and to this the laborious habits of the agricultural population, in the Central Provinces of Mexico, are probably due.

On the evening of our arrival at Nŏpălūcă, a courier came in from the Capital with letters, which informed us that disturbances had taken place at La Puebla, the Capital of the Province, where it had been our intention to sleep on the following night, which, although not serious, induced the Supreme Government to wish that the Commission should take another route, which branching off to the North, across the Llānŏs de Apăn, (a district remarkable for its fertility,) enters the valley of Mexico by Ŏtūmbă and San Crĭstōvăl, leaving Lă Pūeblă far to the South and West. With this wish we of course complied, and two dragoons of the escort were dispatched, in order to prepare quarters for us at any Hacienda, in the direction of Otūmbă, where they might be able and willing to afford us hospitality for the night. We ourselves did not set out till ten o'clock, when we took the road to Hŭămāntlă, (a little town four leagues from Nŏpălūcă,) which led us through a succession of large fields of corn, barley, and maize, interspersed with plantations of the Aloe, (*Agare Americana*,) from which the wine of the natives, Pulque, is extracted. Having already given a detailed account of the process by which this liquor is prepared, (Book I. Section III.) it would be superfluous to repeat it here; I shall, therefore, merely state that Pulque is

nowhere found in greater perfection than in the district through which we were about to pass, where the Maguey plantations, from their vicinity to La Puebla and Mexico, constitute one great source of the prosperity of the inhabitants.

Although but very short notice had been given at Hŭămāntlă of our intention to visit that place, we found a great part of the population waiting in the streets to receive us; nor was it possible to withstand the solicitations of the Cura, at whose house we were absolutely compelled to alight. We were immediately visited by the Ayuntamiento, with the Alcalde at its head, as well as by the officers of a regiment quartered in the town; after which we were conducted to a room, where a dinner for thirty people had been prepared, in a style of hospitality which would have done honour to any country in the world. The moment that we quitted the table, our kind hosts, who were determined not do things by halves, sent for all our servants, as well as the escort, who were regaled with the innumerable dishes which we had been compelled to leave untouched; while we, being very great people, were solicited to exhibit ourselves from the balcony to the crowd assembled below. I mention these circumstances, trifling as they may appear, because they serve to show the feelings with which the prospect of an intercourse with Great Britain was hailed by the Mexicans. Nothing could be more decisive in this respect than our reception, particularly in

the smaller towns, where, whatever was done, was done spontaneously by the inhabitants themselves, and not under the direction of the Government, as was the case at Jălāpă and Veracruz.

The population of Hŭămāntlă does not exceed three thousand souls. The town ranks as second in the district of Tlăscālă, to which it belongs; indeed, it is but little inferior in importance to the Capital itself, which has now "fallen from its high estate," and does not contain above four thousand inhabitants: a sad change from the days when it set at defiance the whole power of Montezuma, and baffled, for some time, the efforts of Cortes, to force a passage through its territory.

On leaving Hŭămāntlă, which we did not accomplish until a very late hour, it being three o'clock before dinner was concluded, we took the road to Ăcŏcōtlăn, a large Hacienda about five leagues from the town, at which we found that we were to sleep. Our ride was a beautiful one, as our guide conducted us through a rich country, at the foot of the Mălīnchĕ, a mountain which forms the connecting link between the Volcanos of Mexico and that of Orízāvă, and at the same time disseminates fertility throughout the surrounding district by the numberless streams which descend from its summit. From whichever side the Mălīnchĕ is seen, its figure is always a perfect cone: its slope produces some of the finest wheat known in Lă Pūeblă; and lower down, wherever the mountain-torrents afford any

facility for irrigation, crops of maize are grown, which, in a good year, increase in the ratio of 400 fanegas for every one that is put into the ground.

The Hacienda of Ăcŏcōtlăn has little to recommend it but its situation: nothing, however, can be finer than this. The balcony of the great Sala, or state-room, in which we were lodged, commands a view of five mountains, two of which are upwards of two thousand feet higher than the highest mountain in Europe. We saw Orĭzāvă with its peak *couleur de rose*, reflecting the last rays of the setting sun;—the Coffre de Pĕrōtĕ already half sunk into obscurity;—the Mălīnchĕ quite in the shade before us; and the two great Volcanos which separate La Puebla from Mexico, (Pŏpŏcătēpĕtl and Ĭstăccī-huătl,) with an occasional ray of light playing upon their snowy summits. We were all admiring the magnificence of this scene, when the silence around us was broken in the most unexpected manner. A long file of Indians returning from the labours of the day, drew up in a line before the house, and began to chant the Ave Maria, or evening hymn. The music was very simple, and few of the voices good, yet the whole, like the *Ranz des vaches* of the Swiss, derived an interest from the splendid scenery around, and made an impression, which much sweeter strains, under other circumstances, might have failed to produce.

Our host at Ăcŏcōtlān was a most respectable man; one of the numerous class of minor proprie-

tors, who continue, all their lives, to cultivate the spot upon which they are born, and transmit from generation to generation an estate, which supports themselves and their children, in comfort, and comparative affluence. He received us with great hospitality, and gave us a most excellent supper, with some Pulque, which, unaccustomed as we were to the beverage, most of our party thought exceedingly agreeable. This was not the case with the Chile, a powerful species of Capsicum, both green and red, of which the Mexicans make an immoderate use in most of their dishes: the taste is not disagreeable, but the pungency is so great, that a stranger finds it difficult to taste it without inconvenience. Robinson states, in his account of Mina's expedition, that with many of the American officers, who were compelled to live for some days upon Tortillas and Chile, on their march towards the Interior, excoriation was the consequence.

Our next stage from Ăcŏcōtlăn was Cūautmăn-zīngŏ, where we were advised to pass the night, although the distance was only seven leagues, on account of the difficulty of reaching any other resting-place calculated to receive so large a party. The road was mostly good, but as it continued to wind around the foot of the Mălīnchĕ, it was occasionally intersected by deep barrancas, (or ravines,) which although perfectly passable for horsemen, retarded the progress of the carriages considerably. In one place we came to a descent of about twelve feet per-

pendicular, which there was no possibility of avoiding, as the barranca, both above and below, was exceedingly deep and rugged. The carriages were before us when this obstacle to our farther progress was discovered, and a dragoon came galloping back to announce that it was impossible to proceed. Upon reaching the place, however, we discovered that there was such an abundance of loose stones in every part of the ravine, that it would not be difficult to construct an inclined plane by which the carriages might descend; and this our joint efforts soon accomplished, a part of the escort having assisted in the conveyance of materials, while the rest broke down with their lances the side of the barranca. In about half an hour a very tolerable bridge was manufactured, and we had the pleasure of seeing the carriages all reach the bottom in safety.

At Cūsutmănzīngŏ, where we arrived at an early hour, we were welcomed with the same hospitality which had characterized our reception everywhere, during our progress through the country. The most valuable portion of the estate consisted in some extensive corn-lands watered by the Mălīnchĕ, and in the Maguey plantations more immediately about the house. These we were glad to have an opportunity of visiting; and a part of the afternoon was employed in inspecting the progress of Pulque-making in all its stages. There is nothing disagreeable either in the smell or appearance of the liquor on the spot where it is thus prepared. The greatest atten-

tion is paid to cleanliness in the buildings connected with it, and it derives a very refreshing coolness from the slight state of fermentation in which it ought always to be drunk. It is only by exposure to the sun, and a careless mode of conveyance to the great towns, which are at a considerable distance, that it acquires that unpleasant flavour which Humboldt compares to the smell of putrid meat. In this state it becomes really offensive; although to the amateurs in the capital who are unaccustomed to Pulque in its original purity, it is said to be a recommendation. On the same principle, in Madrid, Irish butter is preferred to fresh, which is thought tasteless, and insipid.

We left Cuāutmănzīngŏ early on the morning of the 29th of December, but stopped to breakfast at San Nicŏlās, a fine Hacienda belonging to the Conde de Sāntiāgŏ, with whose family we had the pleasure of making acquaintance, as they happened to be residing in the country at the time. This was our first introduction to the Creole nobility, and we were much pleased with the unaffected politeness of their manners. After a most sumptuous entertainment, we were allowed to proceed on our journey, but not until our escort and servants had been made to partake of the Count's hospitality, which was extended even to the horses of our very numerous party. About four in the afternoon, we reached the Venta de las Indias, (the Inn of the Indies,) the magnificent name of which had led us to expect better

accommodations than the house, which is very small, was calculated to afford. The inn is about eleven leagues from Cuautmănzĭngŏ, and seven from San Nicŏlās. The whole intervening space is laid out either in fields of Maize, Frijoles, wheat, and barley, or in Maguey plantations, the value of which increases in proportion to their vicinity to the Capital. The country, as the name denotes, (Los Llanos, the plains, of Apăn,) is flat and uninteresting. A few great Haciendas are scattered, at intervals, over the plain; but we did not see a tree throughout the whole district. Game we found in abundance, particularly hares, which differ from ours only in colour, having a much larger proportion of white, and being sometimes spotted with a sort of greyish blue.

On our approach to Otūmbă, (Dec. 30,) the appearance of a large species of Peruvian pepper, called El Arbol del Peru, and a little broken ground, announced our vicinity to the mountain-ridge which still separated us from the Valley of Mexico. The Arbol del Peru is, I believe, known in Europe, although at Madrid, where I have seen it, it was a pretty, but diminutive shrub; in Mexico, where it is very common, it attains a considerable size, and is remarkably ornamental, and graceful in its appearance.

Otūmbă, like most of the smaller towns through which we had passed, appeared to have suffered considerably during the Revolution. From its vicinity

both to the Capital, and to the Llānŏs, where a formidable Insurgent force was organized during the Civil War, it was transferred frequently from one party to the other, never remaining long in the possession of either, but equally maltreated by both. It will require many years of tranquillity to obliterate the traces of this period of universal suffering.

As usual, on entering the town, we found a dinner provided for us at the house of the Alcalde, of which we were forced to partake, though we regretted a delay, which retarded our arrival at Săn Jūan dĕ Tĕŏtĭhuăcān, (where we slept,) until after dusk, and consequently prevented us from visiting the Mexican antiquities in the vicinity of that place. These ancient monuments consist of two immense pyramids, dedicated to the Sun and the Moon, truncated, as all these pyramids are, and considerably defaced both by the hand of time, and by the fanaticism of the first conquerors, who seem to have left nothing undone in order to destroy every memorial of the primitive religion of the country. Such, however, is the solidity of these structures, that it has not been found possible to complete their destruction. They stand at some distance from the road, and it was nearly dusk when we passed them; but seen even thus, there was something imposing in the enormous size of these masses, which rise conspicuous in the middle of the valley, as if to testify of ages long gone by, and of a people whose power they alone are left to record. Reflections such as

these strike the imagination very forcibly after traversing the plain of Otumba, where the Mexicans made one of their most gallant struggles against the superior skill and weapons of their invaders. I could not help calling to mind the description given by Solis of that plain,—(a description which used to be my delight as a boy, long before I ever dreamed that it would be my fate to visit the spot,)—"with the rays of the sun playing upon the crests of the Mexican warriors, adorned with feathers of a thousand hues," and contrasting the picture which he has traced of that brilliant army, with the state of ignorance, wretchedness, and abject submission, to which their descendants have been reduced since the Conquest. Whatever be the advantages which they may derive from the recent changes, (and the nature of these time alone can determine,) the fruits of the introduction of our boasted civilization into the New World have been hitherto bitter indeed. Throughout America the Indian race has been sacrificed; nor can I discover that in New Spain any one step has been taken for their improvement. In the neighbourhood of the Capital nothing can be more wretched than their appearance; and although, under a Republican form of government, they must enjoy, in theory at least, an equality of rights with every other class of citizens, they seemed, practically, at the period of my first visit, to be under the orders of every one, whether officer, soldier, churchman, or civilian, who chose to honour them with a command.

We left San Juan early on the 31st of December, and commenced, not without much curiosity, our approach to the Capital. We were gratified almost immediately with a view of the Valley of Mexico, but the day being unusually cloudy, neither the Lakes, nor the town, were distinctly visible. After descending from the ridge of hills, which forms the boundary to the North-east, and traversing a long stone causeway, by which the lake of Tezcuco is separated from that of San Christoval, we arrived about twelve o'clock at the Guadalupe gate, where we were met by Mr. Alaman, the Minister for Foreign Affairs. This gentleman, after making us enter a large state-coach, which had been Iturbide's, but which was now destined by the Government for our use, conducted us to a house on the Alameda, or great Public Walk, which had been furnished for our reception, where he left us to make our own arrangements, after begging us to consider ourselves completely at home, and adding that we should find every thing that we could possibly want provided for us.

Of this unexpected courtesy we were glad, at first, to avail ourselves, as all the heavy baggage had been left at Jalapa; only a few mules, with our beds, portmanteaus, and a canteen, having accompanied us to the Capital. This is a necessary arrangement in Mexican travelling, as the ordinary pace of a Mueteer, when his mules carry their full load of twelve Arrobas, (300 lbs.) does not exceed four leagues a

day: with a load of 200 lbs. they keep pace with a carriage without difficulty, and are then much preferable to any other mode of conveyance for baggage, as no roads, however bad, can stop them, while with any thing upon wheels, difficulties are constantly occurring.

None of our party had suffered from sickness on the journey, yet we were all much fatigued on reaching the Capital. There is something very trying at first in the climate of the Tropics, particularly where, as in our case, the sedentary life of a ship is exchanged for one of sudden and violent exertion. The transition, too, from the relaxing heat of the Coast, to the rarefied atmosphere of the Table-land, was severely felt by us all. We had disdained to use the precautions which the natives uniformly take when travelling, by muffling up the lower part of the face in a white handkerchief, and the consequence was that our lips were cracked by the sun, and the peculiar subtility of the air, in a manner that long left us a painful recollection of our journey. In every other respect we could only look back to it with pleasure. We had traversed a country, hitherto visited by very few of our countrymen, where, if there were but few beauties, there was novelty in abundance to attract us, and we had received, at every step, the most unequivocal proofs, that the Commission with which we were entrusted was a most acceptable one to the great mass of the inhabitants. Many of them termed the commence-

ment of a more unrestricted intercourse with Europe, "the second discovery of the New World;" and such it has indeed proved to us, for we have acquired more information respecting America, and a greater insight into the capabilities of the country, and the character of its inhabitants, in the last three years, than had been obtained during the three centuries which preceded them.

SECTION II.

RESIDENCE IN THE CAPITAL; AND RETURN TO THE COAST.

THE approach to Mexico did not give us a very favourable idea either of the Capital, or of the country about it. The valley on the Otumba side possesses none of the beautiful features which are so remarkable to the South and East; for, having more recently formed a part of the great lake of Tĕzcūcŏ, which in the rainy season still extends as far as San Crĭstōbăl, the waters in receding have left a barren tract, covered with a crust of Carbonate of Soda. Sterility prevails, with few interruptions, from the village of Săn Jūan dĕ Tĕŏtihŭacān to the Convent of Guădălūpĕ, in which the Virgin of Guădălūpĕ, the Patroness of Mexico, has taken up her abode. A drawing of this rich but singular building will be found in the first volume: it is difficult to say to what style of architecture it belongs, as all pretentions to uniformity are destroyed by the Capillas, (chapels,) erected in the vicinity of the principal

edifice by the more wealthy votaries of the Virgin, one of which is very remarkable, for, having been built in consequence of an escape from shipwreck, in order to commemorate the event, it has assumed as much as possible the form of the sails of a ship.

The avenue which extends from Guadalupe to the gates of the Capital is traced upon the line of one of the ancient Mexican causeways: it is broad and paved in the centre, with a row of trees on each side; but the suburb to which it leads by no means corresponds with this magnificence. It is dreary and desolate, the Indian population by which it was formerly tenanted having been destroyed by an epidemic disorder, while their houses, which are merely composed of mud-bricks baked in the sun, are entirely in ruins.

Such a scene agreed too ill with the picture which Humboldt has drawn of Mexico, not to occasion us considerable disappointment, nor were we satisfied with the assurances which we received, that we had not passed through any one of the principal streets of the town, on our way from the Gate, until a view of the splendid Calle de San Francisco, which enters the Alameda close to the house in which we were lodged, convinced us of the propriety of not forming too hasty an opinion. The second day made converts of us all: in the course of it we had occasion to visit most of the central parts of the town, and, after seeing the great Plaza, the Cathedral, the Palace, and the noble streets which communicate with them,

we were forced to confess not only that Humboldt's praises did not exceed the truth, but that amongst the various Capitals of Europe, there were few that could support with any advantage a comparison with Mexico.

In the general style of the architecture there is something very peculiar. The streets are broad, airy, and drawn at right angles, so that by looking down any two, at the point where they intersect each other, a view of nearly the whole extent of the town is commanded. The houses are spacious, but low, seldom exceeding one story; the roofs are flat, and as they sometimes communicate with each other for a considerable distance, when seen from an elevation, they look like immense terraces, the parapets by which they are separated being lost in the distance. Few of the public buildings attain the height to which an European eye is accustomed in such edifices. This is owing partly to the difficulty of laying a good foundation in the valley of Mexico, where water is uniformly found at a very few feet from the surface, and partly from the frequency of earthquakes. The first renders it necessary to raise all the larger buildings upon piles, while the second, although the shocks are seldom severe, would endanger the safety of very lofty edifices, which are the first to suffer.

Every one who has resided in a Southern climate, knows how much the purity of the atmosphere tends to diminish distances; but even at Madrid, where

the summer sky is beautifully clear, I never saw it produce this effect in so extraordinary a degree as at Mexico. The whole valley is surrounded with mountains, most of which are, at least, fifteen miles from the capital, yet on looking down any of the principal streets, (particularly in the direction of Sān Āngĕl, or Sān Ăugŭstīn,) it appears to be terminated by a mass of rocks, which are seen so distinctly, that on a fine day, one can trace all the undulations of the surface, and almost count the trees, and little patches of vegetation, which are scattered over it.

The general appearance of the town at the period of our arrival was dull; except at an early hour of the morning, when the great streets presented a very lively scene, particularly those near the Cathedral, and the Plaza Mayor, where the Părĭān, and the principal shops are situated. In these we found many articles of domestic manufacture; hats, with cotton and woollen cloths, from La Puebla and Quĕrētărŏ;—a great variety of coloured blankets, called Mangas, used as a cloak when riding by most people, and as a substitute for every other kind of clothing by the lower orders;—leather, curiously wrought, from Guadalajara;—with saddles, spurs, lassos, and all the trappings with which the Mexican horses are usually disfigured. All these were concentrated upon one point; near which, in the Calle de Plateros, there was a whole nest of silversmiths. In the other parts of the town, some cumbrous furniture was occasionally to be met with, as bedsteads,

presses, and tables, painted, varnished, and inlaid at a vast expence, but of a most uncouth shape, and generally as little calculated for comfort, as for ornament. All the other contents of the shops appeared to be European, but the supply was scanty, and the price enormous. Nature, on the other hand, as if to compensate the want of the luxuries of the Old World, appeared to have been most munificent in her gifts. For many days after my arrival, I could never pass a common fruit-stall, without stopping to admire the variety of fruits and flowers with which it was adorned. Pine-apples, Oranges, Bananas, Chirimoyas, Melons, Grenaditos de China, and a thousand other delicious fruits, are found in abundance during the greatest part of the year, together with Pears, Apples, and all the productions of more Northern climates. Many of these fruits do not, it is true, thrive on the Table-land; but it must always be borne in mind that Mexico, from the peculiarity of its geological structure, and the manner in which heat is modified by height in every part of its territory, combines, sometimes within a very few leagues, the greatest possible variety of climates. On the road to Acapulco, for instance, a descent, as rapid as that from Las Vigas to Jalapa, commences within a few miles of the Capital, so that on reaching the plains of Cuĕrnăvācă, you find a *Tierra Caliente*, with all its various productions, from which Mexico derives a constant and most abundant supply. On the Table-land, flowers are to be found at

all seasons, but particularly from March to June, when roses spring up in such profusion, that, on the *dias de fiesta*, hundreds of men and women, of the very lowest classes, are seen returning covered with garlands from the Chĭnāmpăs. The trees, too, preserve their foliage during ten months of the year.

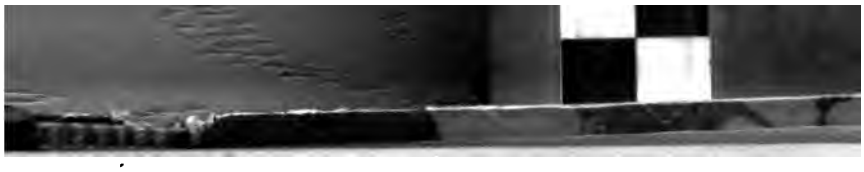
With such advantages as these, the valley about the Capital might be made a paradise; yet there is hardly a single country-house to be seen, except in the Pueblos of Săn Angĕl, and San Ăgŭstīn, which have been almost abandoned since the commencement of the Revolution. The principal feature in the smaller villages is a little white chapel, which produces a beautiful effect when seen through the trees at a distance; but, as you approach, the charm is broken, for it is usually surrounded by nothing but wretched hovels, which afford shelter to a few Indian families, with all their live stock, compressed into the smallest possible compass. Yet there are very pretty rides in many directions: Chăpūltĕpēc and Tăcŭbāyă, (of which I shall have occasion to speak later,) are within a moderate distance; and, by taking the direction of the Păsēŏ dĕ lăs Vīgăs, you see the remains of the Chināmpăs, or floating gardens, which are to be found at a little distance from the canal of Chalco. It seems to me questionable whether they ever did float, but it is certain that they are now all fixtures: they are surrounded, however, by a broad ditch full of water, over which a little drawbridge is thrown, to keep

up the communication with terra firma. Of the correctness of the description which Humboldt gives of their beauties, it was impossible for us to judge, as, in January, we naturally looked in vain for the hedges of flowers, with which he states them to be adorned: to us they appeared mere kitchen-gardens, and it is, in fact, from thence that the Capital is principally supplied with vegetables. The hut of the Indian proprietor, far from adding to the attractions of the scene, is generally a miserable hovel, but too well suited, in point of appearance, to the squalid looks and tattered garments of its inhabitants.

The canal of Chalco presents a much more lively prospect. Both evening and morning it is covered with canoes, in which the natives convey the produce of their gardens, fruit, flowers, and vegetables, to the Mexican market. Chalco is a large town, situated upon a lake of the same name, about twenty miles to the South-east of the Capital; the canal which leads to it is very narrow. The canoes mostly used are of two kinds: one, a punt, which is pushed along by men, and contains sometimes the joint stock of two or three families; the other, a very light narrow canoe, about twelve feet in length, and just broad enough to contain one person sitting down, at each end, with their little provision for the market piled up between them. The canoes are chiefly worked by women, with single paddles, with which, however, they are made to skim over the water with great velocity. The

gesticulations of these ladies, when animated by a little Pulque on their return home, their extreme volubility, and the energy which they display in their quarrels with the tribes of children which they carry about with them, form a curious contrast to their melancholy looks, and extreme taciturnity at all other times. They are, however, a very hardy race, and capable of supporting great fatigue. I have often met, when returning from my rides, whole files of men and women, all loaded, the men with baskets, the women with a couple of children each, setting out from Mexico at five in the evening, to return to their villages, which I usually found, upon inquiry, to be seven or eight miles off; and this they accomplish in an hour and a half, by continuing steadily at a long Indian trot, which many of them are able to keep up for a surprising distance. If a question be asked of the leader, the whole party stops, and when it is answered, they proceed again together at the same uniform pace.

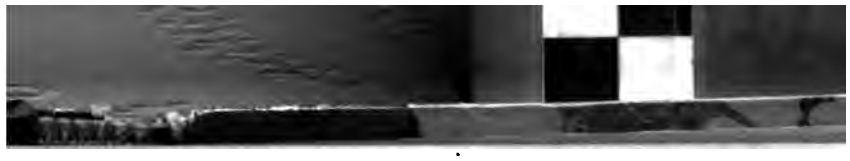
Amongst the many curious scenes that Mexico presented at the end of 1823, I know none with which we were more struck than the Alameda. As compared with the Prado of Madrid, it was, indeed, deprived of its brightest ornament, the women; for few or none of the ladies of Mexico ever appear in public on foot; but to compensate this, it had the merit of being totally unlike any thing that we had ever seen before. On a Sunday, or *Dia de Fiesta*, the avenues were crowded with enormous coaches,



mostly without springs, but very highly varnished, and bedizened with extraordinary paintings in lieu of arms, in each of which were seated two or more ladies, dressed in full evening costume, and whiling away the time with a segar *en attendant* the approach of some of the numerous gentlemen walking or riding near. Nor were the equestrians less remarkable; for most of them were equipped in the full riding-dress of the country, differing only from that worn by the lower orders in the richness of the materials. When made up for display in the Capital, it is enormously expensive. In the first place, the hind-quarters of the horse are covered with a coating of leather, (called the anquera,) sometimes stamped and gilt, and sometimes curiously wrought, but always terminating in a fringe or border of little tags of brass, iron, or silver, which make a prodigious jingling at every step. The saddle, which is of a piece with the anquera, and is adorned in a similar manner, rises before into an inlaid pummel, to which, in the country, the lasso is attached; while the plated headstall of the bridle is connected by large silver ornaments with the powerful Arabic bit. Fur is sometimes used for the anquera; and this, when of an expensive kind, (as black bear-skin, or otter-skin,) and embroidered, as it generally is, with broad stripes of gold and silver, makes the value of the whole apparatus amount to four or five hundred dollars, (about 100*l.*) A common leather saddle costs from fifty to eighty dollars. The rider wears a

Mexican hat, with a brim six inches wide, a broad edging of gold or silver lace, and a very low crown: he has a jacket, likewise embroidered in gold, or trimmed with rich fur, and a pair of breeches open at the knee, and terminating in two points considerably below it, of some extraordinary colour, (pea-green or *bleu celeste*,) and thickly studded down the sides with large silver buttons. The lower part of the leg is protected by a pair of Guadalajara stamped-leather boots, curiously wrapped around it, and attached to the knee with embroidered garters; these descend as far as the ankle, where they are met by shoes of a most peculiar shape, with a sort of wing projecting on the saddle side;* and the whole is terminated by spurs, (made at Lerma or Toluca,) of so preposterous a size, that many of them weigh a pound and a half, while the rowels of all trail upon the ground, if, by any chance, the wearer is forced to dismount. A cloth manga, or riding-cloak, is often thrown over the front of the saddle, and crossed behind the rider in such a manner as to display the circular piece of green or blue velvet in the centre, through which the head is passed when the manga is worn, and which is generally very beautifully embroidered. The cost of the whole dress, when the saddle is of fur, with *armas de agua* of the same materials, it is not easy to calculate, as

* The use of these is more general amongst the middling and lower classes.



it depends entirely upon the degree of expence to which a person chooses to go in the embroidery. A very handsome saddle may be bought for three hundred dollars. I have known two hundred dollars given for a pair of Guadalajara boots, (worked with silver,) but eighty may be taken as a very liberal price. A jacket, not at all particularly fine, would cost as much more. The hat is worth twenty dollars; the breeches, if at all rich, fifty or sixty; the spurs, with embroidered stirrup-leathers, twenty; the plated bridle thirty-two; while a manga of the most ordinary kind is not to be procured under one hundred dollars, and, if at all remarkable, could not be purchased for less than three. The horse usually mounted on these occasions must be a Brazeador,* fat, sleek, and slow, but with remarkably high action before; which, it is thought, tends to show off both the animal and the rider to the greatest advantage. The *tout ensemble* is exceedingly picturesque; and the public walks of Mexico will lose much in point of effect, when the riding-dress of England, or France, is substituted, as it probably will be, for a national costume of so very peculiar a character.

The Ălămēdă, which is situated nearly at one extremity of the town, communicates with the Paseo Nuevo, a broad avenue of trees, from the extremity of which the road to Chăpūltĕpēc, and Tăcŭbāyă,

* The name is taken from the peculiar action of the *brazos*, or fore-legs, which are doubled up at every step, while the whole weight of the horse is thrown upon the hind-quarter.

branches off. The first is a summer palace, built by the celebrated Count Galvez during his Vice-royalty, upon a rock, to the foot of which the waters of the lake of Tĕzcūcŏ formerly extended. Nothing can be more beautiful than its situation, or more striking than the view of the valley of Mexico which it commands. The road to Chăpūltĕpēc is divided by an aqueduct, which separates the portion of it destined for carts and mules, from that intended for carriages and equestrians. The structure of this aqueduct is solid; it consists of nine hundred arches, and the fountain, from which it is supplied, produces the clearest and most pellucid water I almost ever saw. On entering the gardens of Chăpūltépēc, the first object that strikes the eye is the magnificent Cypress, (*Sabino*, Ăhŭahuētĕ, or *Cupressus disticha*,) called the Cypress of Montezuma. It had attained its full growth when that monarch was on the throne, (1520,) so that it must now be, at least, four hundred years old, yet it still retains all the vigour of youthful vegetation. The trunk is forty-one feet in circumference, yet the height is so majestic, as to make even this enormous mass appear slender. On a close inspection, it appears to be composed of three trees, the trunks of which unite towards the root so closely, as to blend into one; this circumstance, however, led us to give the preference to a second Cypress, not quite equal to the first in circumference, (it is thirty-eight feet in girth,) but as old, as lofty, and distinguished by a slight

curve towards the middle of the stem, which gives it a particularly graceful appearance. Both trees are covered, in part, with a parasitic plant, (*Tillandsia usneoides*,) resembling long grey moss, which sets off their dark foliage amazingly. They were formerly surrounded by a whole wood of *Sabinos* as venerable as themselves; but the Revolution, which spared nothing, did not respect them. A detachment of troops was quartered at Chăpūltĕpēc, which, from its commanding height, is a strong military position; and although it was never attacked, more damage was done by these barbarians, than the place would have sustained had it been taken by storm. They cut down a number of the finest old trees for fire-wood, and as no notice was taken of such slight excesses, at a time when licence was the order of the day, it is wonderful that any should have escaped. The view from the Ázŏtēă of Chapultepec, embraces the whole extent of the valley of Tĕnōchtïtlān, with its lakes and villages, and highly cultivated fields, intersected, every here and there, by rocks of the most uncouth shape, which stand sometimes isolated, and sometimes in groups so very singularly put together, as to give quite a novel character to the scene. Beyond these again, the eye rests upon the two splendid mountains, which form the boundary of the valley to the South-east. The most distant of these, Pŏpŏcătēpĕlt is higher than any mountain in the Northern division of America, except Mount St. Elias. Ĭztăccīhuătl, which is

much nearer, is two thousand feet lower; but, from whatever part of the valley the two are seen, they stand proudly preeminent; and, in the evening, it is beautiful to watch the effect of the last rays of light playing upon their summits, whilst every thing around is sinking into obscurity.

In the interior of Chăpūltĕpēc, there is nothing at all worthy of remark, for the principal apartments are neither spacious, nor lofty; but the building, when seen from without, is a beautiful object, and one, upon which the eye rests with pleasure in almost every part of the valley.

The great road to Lērmă and Tŏlūcă, which diverges to the South-west from Chăpūltĕpēc, passes through Tăcŭbāyă, a village about four miles from the gates of the Capital, which was formerly the country residence of the Archbishop of Mexico. The episcopal palace is situated upon an elevated spot, with a large olive plantation, and a garden attached to it. The windows of the principal rooms command an extent of country nearly equal to that seen from Chăpūltĕpēc, but the whole place has a deserted and melancholy appearance, having been entirely neglected since the Revolution.

Amongst the few public buildings in the town of Mexico which it can be necessary to describe, the Cathedral is one of the finest. It covers an immense space of ground, but to those who are accustomed to the beautiful spring of the arch, by which the old Gothic churches in Europe are distinguished, nothing

can make up for the want of height, which, as I have already remarked, is an unavoidable defect in Mexican architecture. Riches have been lavished upon the interior of the cathedral; but there is nothing grand or imposing in the effect of the whole. The most remarkable feature is a balustrade, which occupies the centre of the church; it is composed of a metal that was brought from China, through the Philippine Islands, (whence its name, Metal de China,) and which appears to be a composition of brass and silver, massive, but not handsome: it must however have cost a very large sum, as it was paid for by the weight in dollars. In the outer wall of the cathedral is fixed a circular stone, covered with hieroglyphical figures, by which the Aztecs used to designate the months of the year, and which is supposed to have formed a perpetual calendar. At a little distance from it, is a second stone, upon which the human sacrifices were performed, with which the great Temple of Mexico was so frequently polluted: it is in a complete state of preservation, and the little canals for carrying off the blood, with the hollow in the middle, into which the piece of jasper was inserted, upon which the back of the victim rested, while his breast was laid open, and his palpitating heart submitted to the inspection of the High Priest, give one still, after the lapse of three centuries, a very lively idea of the whole of this disgusting operation. Whatever be the evils which the conquests of Spain have entailed upon the New

World, the abolition of these horrible sacrifices may, at least, be recorded, as a benefit which she has conferred upon humanity in return.

The Cathedral forms part of the northern side of the Plaza Mayor, or great square. Another whole side is occupied by the Palace, which was formerly the residence of the Viceroy, but is now occupied by the Executive power, the Ministers, who have their offices there, and the principal courts of justice; so that it presents, at all hours, a very busy scene. In the interior, the part most worthy of notice is the Botanical Garden, which was extensive as well as rich, until the Revolution, when a portion of it was converted into barracks for the body-guard of the Viceroys, who were taught, by the fate of Iturrigaray, the necessity of having a strong military force constantly at hand. Some of the most valuable productions were afterwards removed, by order of Madame Căllējă, when Vice-Queen, to make room for some European vegetables, of which she was particularly fond; but in 1823, it was supposed that the garden still contained nearly three hundred species of plants little known in Europe. Of these I can attempt no description. I was, however, much struck with a tree of considerable size called "El Arbol de las Manitos," the tree of the little hands, *(Cheirostemon platanifolium,)* bearing a beautiful red flower, the centre of which is in the form of a hand, with the fingers a little bent inwards. Only three trees of the kind exist in all Mexico;

two in the botanical garden, and one, (the mother plant,) in the mountains of Tŏlūcă, where it was accidentally discovered. The same mountains produce a very singular species of Cactus, which has likewise been transplanted to the botanical garden. It looks exactly like an old man's head, as it is covered with long grey hair, which completely conceals the thorns: it is raised in boxes filled with pieces of the scoria, amongst which it was originally found. The garden is full of Humming Birds, which feed upon the flower of the Arbol de las Manitos, and, to the European visitor, add much to the novelty of the scene.

Like most Spanish towns, Mexico abounds in churches and convents, the interior of which is very splendid, particularly that of the Profesa, and the great convent of San Francisco. The College of Mines is likewise a magnificent building, the plan of which does honour to the taste of the architect, (the celebrated Tolsa;) although, from some radical defect in the execution, the whole structure is now falling into ruins. It is supposed that the piles, upon which the foundations were laid, were not driven to the depth specified by the contract, in consequence of which the whole superstructure has given way, while the lower floor has sunk below the level of the street. It is quite melancholy to see magnificent rows of columns, windows, and doors, completely out of the perpendicular, with walls and staircases cracking in every direction. The roof, too, in some places,

and the ceilings in almost all, are falling in, and a very few years will complete the destruction of this noble edifice, which ought to have served as a monument of the wealth and magnificence of the miners of New Spain, at whose expence it was erected. The collection of minerals, which the College contains, is rich, but in the very worst order possible; as are also the models and instruments, though a little more attention seems to have been paid to them. They are under the care of a Professor, who gives lectures on chemistry and mineralogy, alternately, which were formerly very numerously attended. His auditors are now reduced to two or three solitary pupils, and the gloom of the vast apartments in the interior corresponds but too well with the dilapidated state of the building without.

By far the most disagreeable part of Mexico, at the close of 1823, was its Lazzaroni population, which rendered the suburbs one continued scene of filth and misery. Twenty thousand of these Leperos infested, at that time, the streets, exhibiting a picture of wretchedness to which no words can do justice. In addition to the extraordinary natural ugliness of the Indian race, particularly when advanced in years, all that the most disgusting combination of dirt and rags could do to increase it was done. Dress they had none: a blanket full of holes for the man, and a tattered petticoat for the woman, formed the utmost extent of the attire of each; and the display of their persons, which was the natural

consequence of this scarcity of raiment, to a stranger was really intolerable. Yet amongst these degraded creatures are found men endowed with natural powers, which, if properly directed, would soon render their situation very different. The wax figures, with which Bullock's exhibition has rendered most people in London acquainted, are all made by the Leperos, with the rudest possible implements. Some of them are beautifully finished, particularly the images of the Virgin, many of which have a sweet expression of countenance, that must have been borrowed, originally, from some picture of Murillo's, for it is difficult to believe that the men by whom they are made could ever have imagined such a face. It is Humboldt, I believe, who remarks that it is to imitation that the powers of the copper-coloured race are confined: in this they certainly stand unrivalled, for while the Academy of San Carlos continued open, (a most liberal institution, in which instruction was given in drawing, and models, with every thing else required for the use of the students, provided at the public expence,) some of the most promising pupils were found amongst the least civilised of the Indian population. They seemed (to use the words of the Professor, who was at the head of the establishment,) to draw by instinct, and to copy whatever was put before them with the utmost facility; but they had no perseverance, soon grew tired of such little restraint as the regulations of the Academy imposed, and disappeared, after a few les-

sons, to return no more. It remains to be seen whether any thing can be effected, by a better system of government, for a race of men composed of such heterogeneous elements. In 1824 they were nothing but a public nuisance. It was hardly possible to pass through those parts of the towns, of which they had possession; and had it not been for the extreme purity of the air, the accumulation of filth before their doors must infallibly have produced a pestilence. The fear of wandering, by mistake, into their territories, which we did, once or twice, on our return from distant excursions, induced us latterly, to prefer the Tacubaya road to any other, because it led at once into the open country, and afforded an easy communication with the spacious avenues, which extend from the Chăpūltĕpēc gate in different directions, for nearly two leagues round the town.

Of the state of society in 1824 it is unnecessary here to speak, as we saw the Capital under very unfavourable circumstances. A civil war, carried on with unexampled cruelty on both sides, had desolated the country for thirteen years; and, although the contest with Spain was at length decided, the disturbances which had arisen in consequence of Iturbide's elevation to the throne, had terminated only a few months before our arrival. The form of government to be adopted was not definitively determined upon; for, though the Provinces united in a cordial detestation of the yoke of the Mother-

country, great differences of opinion prevailed with regard to the propriety of substituting a Central, or a Federal Republic for her authority. The composition of the Executive was exceedingly singular: it consisted of Generals Victoria, Bravo, and Negrete, each of whom being employed in different commissions in the Interior, was replaced by a substitute, named by the Congress, who exercised the supreme authority, in conjunction with his colleagues, until the return of the Propietario, (the member originally named,) to the Capital. The substitutes in January 1824 were Messrs. Michelana and Dominguez, with General Guerrero, by whom the affairs of the country were for some time conducted. A government thus constituted, found it no easy task to curb the licentious spirit which had been generated by the civil war; and there was, consequently, much wildness in the appearance of the troops, and no little insubordination on the part of the officers, of which the insurrection of Lobato afforded a memorable example. Means were found to repress both this, and every similar attempt to resist the authority of the Supreme Government; but time was requisite in order to efface the demoralizing effects of the Revolution, and every thing was still in an incipient state. The streets of the Capital were unlighted; the pavement in many places destroyed, and the principal houses shut up; while the general appearance of the population bespoke poverty and distress. There was hardly a single foreign resident, with the ex-

ception of two gentlemen, (Mr. Ruperti, of the house of Green and Hartley, and Mr. Staples,) who had formed establishments in the city of Mexico, a few months before the arrival of the Commission. Trade was in a state of absolute stagnation; for most of the old Spanish capitalists had withdrawn from the country, and no new channel of communication with Europe had been opened to supply their place. The Mines were in like manner abandoned, and all the numberless individuals who depended upon these two great sources of national prosperity for their subsistence, were reduced to absolute want.

The effects of such a state of things were felt by every class of society, for a great depreciation in the value of agricultural produce was the consequence of the general distress; and many landed proprietors, whose incomes, in better times, exceeded fifty and sixty thousand dollars, were compelled to reside entirely upon their estates, from the impossibility of keeping up an establishment in the Capital. The seeds of future prosperity were, however, in existence, and it was evident that time and tranquillity were alone requisite in order to bring them to maturity. All our inquiries tended to give us a higher opinion of the resources of the country; and next to Independence, the general, and most anxious wish of the population seemed to be for peace. I, therefore, quitted the Capital, where my stay did not exceed three weeks, with a conviction that if it should be my fate to revisit it, I should find things

in a very different state; and it is not without satisfaction that I reflect upon the manner in which this belief was justified by subsequent events.

Before I left Mexico, I had an opportunity of ascertaining the exact nature of the sensations excited by an earthquake, and I cannot say that I found them sufficiently agreeable to entertain any wish for their frequent repetition. On the morning of the 14th of January, 1824, we experienced a shock of the most unpleasant kind, which lasted about six seconds: the motion was perpendicular, not horizontal, and the various noises by which it was accompanied, the cracking of the doors, the rattling of the windows, and the melancholy howling of the dogs, who are usually the first to feel and to announce the approach of an earthquake, were well calculated to alarm even the least timid. The first shock, which occurred at four in the morning, was followed by a succession of others, which, though very slight, served to connect it with a second very severe one, which took place at sunrise. Seventeen other vibrations, so slight as to be almost imperceptible to foreigners, were counted during the next twenty-four hours, after which they ceased, nor have I since experienced any thing of the same kind. Earthquakes seldom do any serious injury in Mexico; a church or two is sometimes thrown a little out of the perpendicular, but beyond this their effects have not often extended. The past, indeed, is no security for the future, in a

country every part of which abounds in the traces of great volcanic eruptions; but still, it enables you to meet an incipient earthquake with infinitely more composure than I at least should feel, under similar circumstances, at Caracas, or upon the ruins of Callao. The natives are both more sensible than strangers of the smaller shocks, and more alarmed by them; while even animals give evident indications of anxiety at their approach.

Having given so detailed an account of the first journey of the Commission to the Capital, it will be unnecessary for me to state any thing with regard to my return to the Coast, except that, not being encumbered with a carriage, I was enabled to effect it in a very short time. I took with me a number of baggage-mules very lightly laden, and two good horses for myself, and my servant. My escort, which the unsettled state of the country rendered indispensable, was changed at each of the towns through which we passed, so that I proceeded with great rapidity. I took the La Puebla road, (the disturbances at that place having been entirely settled,) and made my first stage to the Venta de Cŏrdŏvă, about eight leagues from Mexico, having left that town very late in the day. The second day I reached Lă Pūeblă; the third, Ojŏ dĕ Aguă; the fourth, Pĕrōtĕ; the fifth Jălāpă, where I passed the morning of the sixth day, and from whence I arrived at Vĕrăcrūz in twenty-four hours, which included a few hours rest at Plan del Roi, and Pūentĕ dĕl

Rēy. I found the Thetis still at her anchorage, but was prevented from embarking by a violent Norte, which, with other circumstances, compelled me to remain at Veracruz for nearly a week. Fortunately, the season was healthy, and the firing from the Castle at an end; a suspension of hostilities having taken place in consequence of both parties being tired of such desultory warfare. I lodged at the house of Mr. Smith, (subsequently appointed His Majesty's Vice-Consul,) which was exactly opposite the great battery of San Juan de Ulua, and bore evidence to the precision with which the guns had been brought to bear upon the town, by the number of shots which had gone through it. It must have been a very uncomfortable residence, from what I saw of the effect produced by the opening of the batteries one evening, during my stay, which was sufficiently unpleasant to have induced me to seek other quarters immediately, had not the violence of a Norte without rendered it impossible to think of a change of abode. Nothing can be more melancholy than the appearance of Veracruz during one of these winds. The air is filled with sand, and the sky darkened with clouds, while the waves are driven with such impetuosity upon the beach that the whole line of coast is one sheet of foam. All communication between the shipping and the town is suspended, even when at anchor under the walls of the Castle, which are not half a mile from the pier-head. The rapidity with which

these gales come on is equal to their violence. A little ripple from the North first indicates their approach, and if boats are out, or on shore, not an instant should then be lost in placing them in security. Five minutes afterwards I have seen the strength of a whole boat's crew exerted in vain, in order to keep the head of the boat towards the sea: they sometimes succeeded in carrying it through the shoal water off Mocambo Point, but, as soon as they trusted to their oars, they were driven back again, and compelled to abandon the attempt. The only consolation in these cases is the reflection that, as long as the Norte lasts, there is no danger in the detention on shore. It purifies the atmosphere, and seems to destroy for the time the seeds of that terrible disorder, the "Vomito," which at other seasons proves so fatal to foreigners, upon the whole Eastern Coast of New Spain. This fever, which is very similar to the worst species of the Yellow Fever common throughout the West Indies, takes its names from one of its symptoms, the black vomit, (*vomito prieto,*) by which dissolution is usually preceded. At Veracruz its cause has been sought in the local peculiarities of the situation, and there is little doubt that the exhalations from the marshes which surround the town, must have a tendency to increase the virulence of the disorder. But throughout the Gulph of Mexico, the Vomito has made its appearance wherever a number of Europeans have been assembled for the purposes of trade. At Tam-

pĭcŏ, where it was little known, or, at least, little remarked, before 1821, it is now almost as prevalent as at Veracruz; and New Orleans, to the extreme North of the Gulph, being subject to it during the hot months of the year, it is probable that all the intervening line of Coast will be found exposed to this scourge, when the arrival of Foreigners shall call into activity the latent malaria, which appears not to act upon the natives with similar violence. In them it produces *Frios*, (Agues,) from which many suffer during the summer months, and to which Europeans who have survived the Vomito are likewise liable; while with others it leads to a bilious fever of so very virulent a nature, that unless the most powerful remedies are immediately employed, there is but little time for medicine to act. In many recent cases, the disorder has proved fatal on the third day. Those who survive the fifth are almost out of danger, if they have sufficient stamina to carry them through their convalescence; but there is such a total prostration of strength, that nature often fails at the moment when the most sanguine hopes of recovery are entertained.

One peculiarity of this disease is the facility with which it is contracted. There have been instances of individuals who have not even passed through the town of Veracruz, but have got into a litter upon the beach, and taken the road to Jălāpă within a quarter of an hour after leaving the ship, who have nevertheless carried with them the seeds of the dis-

order, and died of it upon the road. I should be inclined however to think that these must have been persons of a particularly nervous disposition, whose very anxiety exposed them to additional danger, by creating great mental irritation, and with it a predisposition to fever. Precautions ought not indeed to be neglected, but the best are temperance, and abstinence from wine on the voyage out, so as to produce a good habit of body before arriving on the Coast. Any unnecessary stay at Veracruz, and too great an exposure to the sun, should also be avoided; but in all other respects a predestinarian would have a much better chance of escaping, than a man over-anxious to hurry the preparations for his departure in a country where, without the exertion of something far beyond any ordinary patience, very little can be effected. On reaching the level of the Ĕncĕrrŏ, it is supposed that all danger of infection ceases. It is at least certain that the Vomito never spreads amongst the inhabitants of Jălāpă, or of the villages upon the higher parts of the road to that place, in which poorer travellers sometimes stop to die. As far as Plan del Rio its ravages are occasionally felt: it is probable that the disease is indigenous there, as at Veracruz, for Humboldt denies that it can be communicated by infection, or contagion, and states that there is nothing in the air of a sick man's chamber that could render the miasmata, which might exhale from it, dangerous to those around him. Be this as it may, the rarefaction of

the air in the higher regions exempts them from such visitations; and although the disorder may prove fatal to the patient, it has never been known to extend to those who attend him.

When once contracted, however, removal to a more healthy region is of no avail; the Vomito runs its course with equal violence to Jalapa, and on the Coast, and the event depends entirely upon the strength of the sufferer. In general it is remarked that the most robust in appearance are the first to sink under the attack: women are less liable to it than men, and very young children have, I believe, never been known to be affected by it. There is a difference too between the inhabitants of the Southern parts of Spain, or Italy, and other Europeans; the first being less frequently visited with the disorder, while very few natives of a Northern climate, if they become residents, for any time, at Veracruz, are known to escape it. Like the small-pox, it seldom visits the same person twice. Those who survive the first attack, particularly if it be a severe one, consider themselves as acclimatés, and think no farther precautions necessary. The inhabitants of the Table-land of Mexico are even more liable than Foreigners to be seized with the Vomito on visiting the Coast. This is probably owing to the suddenness of the transition: the rapidity of the descent from Pĕrōtĕ allows no time for the body to become seasoned to the moist heat of the Tropics, so different from the dry and rarefied atmosphere of

the higher country: all the pores are opened at once, and the general relaxation of the system necessarily renders them peculiarly susceptible of disease. Few of the muleteers of the Interior will descend lower than Jalapa during the hot months, (from the end of April to the beginning of October,) and when they do, it is lamentable to see the poor wretches, as I have done more than once, actually dying upon the road. When they can no longer sit their mules, they stretch themselves out under the first tree or shrub that will afford them protection from the sun, wrap up their heads in their blankets, and meet their fate with that composure, which, in every part of the New World, seems to be one of the characteristics of the Indian race.

During this season, the Government couriers are changed at Jălāpă, and no one, who is not compelled to do so by business of the most urgent nature, thinks of visiting the *Tierra Caliente*. Commerce is nearly at a stand; and it is only upon the approach of the autumnal equinox that business begins to be again transacted, with any sort of activity. From the middle of October till the end of March, if the winter be not unusually mild, Veracruz, though never a safe, is at least not a very dangerous residence.

The Nortes, though inconvenient for the shipping, are infinitely preferable to the almost certain destruction of the crew with which the fatigue of unshipping the cargo of a merchant-vessel in summer

would be attended; and while they continue, the unhealthy season is seldom known to commence. There have been instances, indeed, of deaths from Vomito in the months of November and December, but these are exceedingly rare, and would probably be found, if inquired into, to have proceeded from some incautious exposure, or excess, on the part of the sufferer.* In an ordinary year, I should have no objection to pass through Veracruz at any time between October and March: indeed, with proper precautions, I should think that it might be done without very great risk much later in the year. The persons most likely to suffer would be servants, and persons of that class, who often will not be induced to prepare themselves for landing beforehand, and, when on shore, are either excessively apprehensive, or unnecessarily imprudent. Amongst these the mortality is sometimes very great. In 1826, a number of Frenchmen, mostly in inferior stations of life, who had come to Veracruz *pour chercher fortune*, were swept away at once; the want of hospitals, which have not been properly re-organized since the Revolution, rendering the progress of the disease doubly rapid. In 1825, a terrible instance of the

* In November 1826, Mr. Oxley, a gentleman who had been travelling for some time in Mexico on the account of some great Manchester houses, died at Veracruz of the Vomito, after having purposely delayed his departure from the Capital from July to October, in order to select the most favourable time for it.

effects of the climate in cases where exposure to the sun is unavoidable, occurred. In consequence of some delay in the completion of the Real del Monte steam-engines, the expedition, which was entrusted with the charge of conveying them up the country, under the orders of Captain Colquhoun, did not reach Veracruz until the commencement of the sickly season; and out of this small party fifteen men were buried near the spot where the disembarkation of the machinery was effected. The attempt to remove it inland was of course abandoned, until the commencement of the winter, but it is grievous to reflect upon the waste of life which was occasioned by a little miscalculation with regard to the time on this side of the Atlantic.

Of the mode of treatment adopted in cases of Vomito at Veracruz I am wholly ignorant. The natives do not willingly resort to the violent measures which are common in the West Indies, and which, where the patient is sufficiently strong to support them, undoubtedly cut short the disease at once. They usually employ medicines of a less decided character, such as olive oil, and infusions of various kinds, which if not very effective as remedies, at least do no harm.* In such cases, the pa-

* Mr. Carrington, who came out to Mexico in April 1826, and afterwards resided for nearly a year with me, got over the Vomito at Jalapa, by a negative treatment of this sort. He arrived there in a state of delirium, having been seized with the disorder upon the road, and was immediately forced to take

tient, if he survives, is indebted for his recovery to the goodness of his own constitution. This, at least, is the language of our English physicians, though I have seen the copious bleedings, and still more copious use of calomel, which our sailors endure at Jamaica, prove fatal at once, when tried upon the less robust constitution of a Spaniard. No clever medical man has yet practised at Veracruz. An American doctor, who was very successful there in the early part of 1826, was carried off by the disease himself at the end of the season; and no good account has been given, either by him, or any one else, of the change which the late influx of foreigners has produced in the proportion of the number of deaths to that of the persons attacked by the fever, which Humboldt states, in the best of the Veracruz hospitals, (in 1804,) not to have exceeded sixteen in the hundred. The Vomito has become, I believe, much more generally fatal, since natives from so many of the Northern parts of Europe have been exposed to its action; I know, however, some instances of persons who have escaped, and whose general health has been even improved by the dangerous crisis which they have undergone.*

a large tumbler of oil and lemon-juice, by the master of the inn. Youth, (he was only nineteen,) and a good habit of body, probably contributed still more effectually to save him, which they did after a severe struggle.

* Amongst the most remarkable of these instances I might mention Don Rafael Beraza, who is employed as King's Mes-

Neither the natives of Veracruz, nor the black population, are subject to the Vomito. By natives, I do not mean the inhabitants of the whole Province, (for those on the Slope of the Cordillera dread a journey to the Coast as much as those who descend at once from the Table-land,) but individuals born in the town of Veracruz, or in the *Tierra Caliente* immediately around it. These seem to enjoy a special exemption from the dangers of the climate, and, strange as it may appear, they do not lose it even if they are removed at an early age from their native shore, and pass several successive years in countries, the natives of which cannot sustain the heat of the Tropics without imminent danger. I am myself acquainted with one young man, of a most respectable Veracruz family, who, after having been sent to receive his education at Paris, Hamburg, and Madrid, returned to Veracruz at the very worst period of the sickly season of 1821, (which was remarkably violent,) after an absence of ten years, and remained there, without the slightest apprehension of danger, for nearly six weeks.

Whether the rule is a general one, or whether his was an exception, due, perhaps, to the very freedom from anxiety, which the conviction of his own safety produced, is a question well worthy of inves-

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senger to the Mission in Mexico, and who, having survived the first attack, now performs the journey to Veracruz on horseback with his dispatches, once or twice a month, in the very worst seasons, without apprehension or inconvenience.

tigation: the general belief of the country is decidedly in favour of the first supposition.

I have been led into details which belong of right to a later period than that comprehended in this Section, by my wish to state connectedly all the facts with which I am acquainted relative to a disorder, the nature of which, as our commercial intercourse with Mexico becomes more extensive, it will be of infinite importance to ascertain.

It is to be hoped that the attention of some competent person will soon be drawn to the subject; for although it is hardly to be expected that art can devise a remedy for a disease, the seeds of which seem to lie in the action of the sun upon the mass of rank vegetation, which, wherever there is water, a Tropical climate is sure to engender; still, there is little doubt that its effects upon the human frame will be less dangerous, in proportion as they are better understood. Great indeed will be the benefit conferred upon mankind, by him to whom the merit of even a moderately efficacious treatment of the Vomito is first due. Most fortunately, its ravages are confined exclusively to the land, few or none of the ships, in which common precautions are taken, and the men not unnecessarily exposed, having suffered from the fever. This has been particularly remarked of our men of war, many of which have remained at anchor off Veracruz, on different occasions, five or six weeks, and yet have left it with a clean bill of health. In vessels where

solitary cases of Vomito have occurred, it has not spread on board, unless where several of the men have been exposed to the action of similar exciting causes, in which case the vessel itself at last becomes a foyer, or receptacle, of those miasmata, by which the disorder is supposed to be propagated. The whole crew is then exposed to the utmost danger; but such instances are exceedingly rare, and with the attention that is now paid to cleanliness and ventilation, they may be expected rather to diminish, than to increase. The Thetis buried only one man during the seven weeks which she passed at the anchorage of Sacrificios, and he died of a disease in the heart.

On the 5th of February, 1824, I returned on board, and we sailed for England the same morning. In crossing the Gulph we met with a severe Norther, which, however, was much more disagreeable in its effects, than while it actually lasted, as it threw the whole volume of water into such a commotion that we had not a quiet moment afterwards for several days. I still recollect with pleasure the relief which we experienced, after passing five whole days with our quarter-boats alternately under water, as we glided past the Morro, and entered the magnificent harbour of the Havana, where there was neither a ripple to be seen on the surface, nor the slightest motion to be felt in the ship. The transition to such a perfectly quiescent state, to a young sailor

like myself, was inexpressibly delightful, not have three subsequent voyages made me forget it.

We were ten days in reaching the Havana from Veracruz, and ten more in the Island, notwithstanding which we anchored within the Plymouth Breakwater on the 17th of March, after a passage of twenty-one days.

Few ships have performed the voyage in so short a time. We were only thirty-one days at sea between Veracruz and Devonport.

SECTION III.

SECOND VISIT TO MEXICO IN 1825.—STATE OF LA PUEBLA,—DESCRIPTION OF HUEHUETOCA, AND TEZCUCO. — ROUTE TO CUAUTLA AMILPAS.

I PASSED the whole of the Summer and Autumn of 1824 in England, but in December I received orders to prepare immediately for my return to Mexico, where I had the honour of being entrusted, subsequently, in conjunction with Mr. Morier, with the negotiation of the Treaty, which it was the intention of His Majesty's Government to conclude with New Spain, in common with the other South American States.

On the 8th of January, 1825, I left London, and on the 18th, after being detained some days at Devonport by contrary winds, we embarked on board His Majesty's ship Egeria, commanded by Captain Roberts, and commenced, for the second time, a voyage, which a few years will, I suppose,

render so ordinary a transaction that it will be little more thought of than the passage from Dover to Calais. Our party was an uncomfortably large one, considering the size of the vessel, as, in addition to Mrs. Ward, Mr. Ball, and Dr. Wilson, who, with myself, formed the Mexican passengers, there were Colonel Campbell and two other gentlemen belonging to the Mission in Columbia, whom the Egeria was directed to land at Carthagena, on their way to Bŏgŏtā. It was only by dint of great good humour, and kindness on the part of Captain Roberts, and a spirit of mutual accommodation amongst all the other members of the party, that we were enabled to stow ourselves away at all, and when we got into the warmer latitudes, we suffered not a little from the effects of being so crowded.

We had some very bad weather on first sailing, but left it behind us, with the Bay of Biscay, and reached Madeira on the eighth morning after our departure from Devonport. There we remained only twenty-four hours. From Funchal we had a run of twenty-one days to Barbadoes, where there is little novelty, or beauty to describe; for although the grove of Cocoa-nuts on the beach is rather picturesque, the effect is destroyed, on approaching the town, by the intermixture of the very worst style of English houses, with the productions of a climate, to which they are particularly ill adapted. Nothing can be more uncomfortable, on a sultry day, than the small boarded rooms, sash windows, and narrow

passages, into which an abode of this kind is divided; yet both at Gibraltar, and in the West Indies, we seem to have preferred this system of wholesale architectural transplantation to the adoption of the corridors and verandas of our French and Spanish neighbours. In the country residences of the Planters, more taste is shown, and a better idea of comfort entertained; but in the town, there is nothing but the black population, and a glowing sky, to denote that one is separated from England by 37 degrees of latitude, and some thousand miles of sea.

Five days' sail carried us from Barbadoes to Carthagena, the hottest, dullest, dryest, and most dreary place that I have almost ever seen. Yet, it is said not to be unhealthy, and, though much frequented by Foreigners, there have hitherto been but few instances of the Vomito, so prevalent at Veracruz. The disorder which proved so fatal to the Scylla, in 1826, (she lost at Carthagena her captain, two-thirds of the officers, and almost all the crew,) is supposed to have originated on board, as it has been ascertained that there was no sickness in the town at the time. This exemption from disease is probably owing to the extreme dryness of the atmosphere, as compared with the Mexican coast. When we were at Carthagena, it was said not to have rained for two whole years, and the marshes in the vicinity of the town were nearly dry. Colonel Campbell took leave of us here to commence his voyage up the Magdalena. From his

description of the heat, the privations, and the annoyances from insects of all kinds, which must be endured during the six weeks' confinement on board one of the long river-boats, in which the voyage to Honda is performed, before you commence the ascent to Bŏgŏtā, it seems evident that a new æra in Diplomacy must be dated from the opening of our communications with the New World. It was, hitherto, thought rather an easy, luxurious sort of *métier;* but a Diplomatist in America requires stamina as well as head, and must have a talent for undergoing a good deal of very rough work, as well as for managing a delicate negotiation. Colonel Campbell was blessed with a frame of iron, and performed, for the second time, in perfect safety, what many would have found an arduous task; but one of the gentlemen who accompanied him, (Mr. Wood,) has since died a victim to the climate, on a journey to Qūitŏ, from Gŭyăqūil, at which place he resided as Consul for about a year.

From Carthagena we made no land until we saw the Island of Pines, (off the coast of Cuba,) Captain Roberts having kept to the Southward of the Pedro shoals in order to avoid Port Royal. Few ships sailing under Admiralty Orders like coming too near to an Admiral's Flag, particularly on a rich and unhealthy station, where there is a possibility of being detained, and a certainty of being obliged to pay tithes upon whatever freight may be procured for Europe. On the 5th of March we made Cape

San Antonio, from which point there are two modes of steering for Veracruz. The first is to run up as high as 24 North latitude, by which means all the shoals and rocks that we are yet acquainted with, between the Island of Cuba and the Mainland, are left to the Southward; and the second, to keep within the shoals, and close along shore, passing between the Bank of Sisal and the town, with the coast of Yŭcătān constantly in view, from about 88 to near 91 of West longitude. In steering the first course, it requires a slant of wind from the North to reach Veracruz, and this it would be in vain to look for between the months of May and October; but at all other times, in as far as a landsman may presume to give an opinion upon such a subject, I should think it by far the safest line to take, on account of the extreme shallowness of the water near the coast of Yŭcătān, and the very inaccurate manner in which the reefs between Campeche and Veracruz are laid down. On the 6th of March, (in West longitude 88,) we had soundings in $2\frac{3}{4}$ fathoms, and on the night of the 8th, we were very near terminating our voyage at some distance from the place of our original destination. We had lost sight of land for upwards of twenty-four hours, and were running down, in the direction of Veracruz, with a beautiful breeze of about eight knots, when one of the leadsmen, whom Captain Roberts had taken the precaution of keeping in the chains, with orders to continue soundings every quarter of an

hour, suddenly obtained soundings in eight fathoms; the next cast of the lead gave seven fathoms; the third six; and although all hands were turned up to put the ship about, if she had not obeyed the helm instantly, we should none of us, in all probability, ever have seen land again. There was a good deal of sea running, and the Egeria was an old vessel, so that if she had struck, she must have gone to pieces. It has been since ascertained that there is only one fathom of water upon the centre of this dangerous shoal, with which the Spaniards themselves were long unacquainted. I was told at Veracruz that its discovery was supposed to account for the disappearance of a number of small vessels engaged in the Campeche Trade, which had been lost, without any thing being ever heard of them afterwards. It lies in Latitude 19.35, Longitude 92.32, Las Arcas, (as laid down in our charts,) bearing North 36.15, East 40 miles.

On the 11th of March we reached Veracruz without any farther interruption. The news of the projected Treaty had been received two days before, by the Jamaica Mail, and nothing, certainly, could exceed the enthusiasm excited in every part of the country by the intelligence of a resolution on the part of His Majesty's Government, which was naturally regarded as the definitive recognition of Mexican Independence. From Veracruz to the Capital, but one feeling was displayed; and in every village through which we passed, we received proofs of its

sincerity; for the wishes of the Government were seconded by the inhabitants, who vied with each other in loading us with marks of attention and kindness.

From the moment that we approached the shores of Veracruz, an astonishing difference became visible in the state and appearance of every thing around us. The Castle was, indeed, still held by a Spanish garrison, and the harbour closed, in consequence, to Foreign vessels, but the firing had long ceased, the siege being converted into a blockade, in which a number of Mexican schooners and gun-boats were employed, while the Castle was occasionally supplied with fresh provisions by the Spanish flotilla from the Havana. The Island of Sacrificios, where we again anchored, and which I had left, a year before, a barren and desolate spot, upon which Sir John Phillimore used to turn out the bullocks bought for his ship's company, had been converted into a regular fortification, under which the Mexican gun-boats sought protection on the approach of the Spanish fleet. Mŏcāmbŏ too had assumed a formidable appearance. In both places the Independent flag was flying, and at the anchorage ground there were more merchant vessels of different countries assembled, than had entered the Ports of Mexico in the whole year of 1823. On the morning of our landing, nothing could be prettier than this scene, the ships being all dressed in their colours, and the

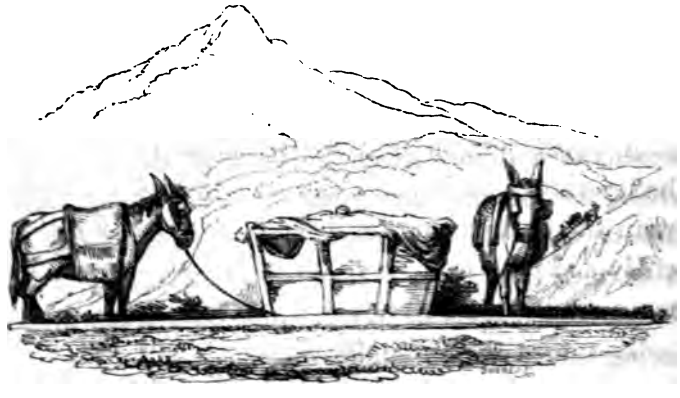
batteries from the shore and the Island answering each other with alternate guns, as we rowed in to the pier-head, where we were received by the Governor of Veracruz, General Rincon, and all his Staff. General Victoria had been summoned from this post some months before, in order to assume the more arduous situation of President.

A small portion of the population of the town had returned to it since the cessation of hostilities with the Castle, but its appearance was still melancholy and desolate; very few of the houses of the more wealthy inhabitants being as yet occupied.

The weather began to be sultry, but the town was healthy, which was a fortunate circumstance for us, as we were forced to remain there two whole days, before we could get our baggage disembarked, and complete our preparations for commencing our journey to the Capital.

I had taken every precaution, however, to have things made up into proper sizes for carriage by mules, before we left England; and by this means, as we had no large chests to cut up, and their contents to distribute into two or three others, (which was the case, in more than one instance, on our first voyage,) we were enabled to get into marching order in less time than could have been expected from the largeness of the party, and the quantity of baggage which the prospect of a long residence had rendered necessary.

Mrs. Ward performed the journey in a litter, a description of which the accompanying sketch will render unnecessary.



It is by no means an uncomfortable conveyance in a wild country, particularly where riding, or the violent motion of a carriage over roads intersected by gullies, and covered with fragments of rock, must have proved dangerous; as in Mrs. Ward's case, who was at that time so near her first confinement, that she was hardly expected to reach the capital in safety. All the rest of the party rode. At the Mănăñtĭāl, we were met by an officer, whom General Bărrăgān, the Governor of the State of Veracruz, had sent to receive us, with a whole cargo of wine, porter, and refreshments of every kind. At Puente del Rey, where we slept the first night, we found a most abundant supper in waiting, and lodgings prepared for us in the only brick house in the place, which had been built since my first visit. At Plan

del Rio similar attentions were shown; and at Jălāpă, where we were most luxuriously lodged in the house of Madame Santa Ana, we were welcomed by General Bărrăgān himself, and his very pleasing wife, with a kindness and hospitality such as I have seldom seen equalled.

We remained one day at Jălāpă, in order to be present at a dinner given by General Bărrăgān, at which we met all the Authorities, both civil and military, and almost every person of respectability, in or near the town. Most of those present had already called upon us in the course of the morning, during the whole of which the house in which we lodged had been literally crowded with visitors. Nothing could be more pleasing to an Englishman than the feelings evinced upon this occasion. Toasts were given, and verses recited in commemoration of the connexion about to be established between the two countries; and although many of the golden visions which were then entertained, have not yet been realised, enough has been gained by Mexico, and by England, to demonstrate the advantages which both may derive from this connexion, in proportion as each becomes better acquainted with the wants and capabilities of the other.

The scene altogether was one of general—of national excitement; and I shall always look back to it with pleasure, as one most gratifying to me, because most honourable to my country.

On the 18th we left Jalapa, still the guests of

the State of Veracruz, to whose hospitality we were indebted for excellent lodgings both at Lăs Vīgăs, and at Tĕpēyăgūalcŏ, with which we were provided by orders of the Governor. At Nŏpălūcă, where we slept on the 20th, we found that similar precautions had been taken by the authorities of Lă Puēblă, in whose territories we then were; and when we reached the Capital of that State, on the 21st, after a most excellent dinner, which we found waiting for us on the road at Ămŏzōqŭe, we were lodged by the Governor, Don José Maria Călděrōn, in his own house, where, notwithstanding the largeness of our party, he insisted upon accommodating us all.

Lă Pūeblă was formerly a town inferior only to the Capital in extent and population. It contains at present about 50,000 inhabitants, and is an important place, as being the seat both of the richest Bishoprick in the country, and of the most extensive manufactures of cotton, earthenware, and wool. The streets, like those of Mexico, are rectangular, spacious, and airy. The houses low, but roomy, and the apartments mostly paved with porcelain, and adorned with Fresco paintings on the stuccoed walls. The country around is rich, but naked, being totally devoid of trees, with the exception of the Pĭnāl, a pine forest, (as the name implies,) which extends from within a league and a half of Nŏpălūcă, to about five leagues from the gates of La Puebla, where cultivation re-commences. The whole dis-

tance is about twelve leagues. The road through the Pĭnāl is extremely bad, and dangerous in unsettled times, the forest being the favourite haunt of banditti, who sometimes assemble there in considerable numbers for a *coup de main;* but our escort was too strong for us to feel any apprehensions of an attack.

We remained during the whole of the 22nd at La Puebla, as the Governor, whose hospitality and friendly disposition towards every Englishman of respectability who visits the town, I have ever found the same, would not hear of our passing a shorter time with him, than we had done at Jălāpă with General Bărrăgān. The delay afforded us an opportunity of seeing the Cathedral, a magnificent building, in the construction of which the Angels themselves are said to have taken a very active part. It is regarded by the Indians, and by a large proportion of the female Spanish population, as a well-authenticated fact, that during the time that the walls of the edifice were constructing, two messengers from heaven descended every night, and added to their height exactly as much as had been raised, by the united efforts of the labourers, during the day. With such assistance the work advanced at a prodigious rate, and was brought to a conclusion in a much shorter space of time than could have been effected by human exertions alone. It is in grateful commemoration of this event that the name of the town, "La Puebla de los Angeles," was assumed; and

as all the details of it are recorded with singular care in the convents, which have since been built upon this favoured spot, there is little danger of their not being handed down to posterity, in all the purity in which they are now preserved.

But whether of divine or human origin, the Cathedral is a very fine building, and the riches of the interior are worthy of a country that has produced, during the last two centuries, nearly two-thirds of the whole of the silver raised annually in the world. The lofty candlesticks, the balustrade, the lamps, and all the ornaments of the principal altar, are of massive silver; and the effect produced by such magnificence, in conjunction with the beauty of the columns of native marble by which the roof is supported, is very striking. We were not, however, allowed to admire them long in peace, for, notwithstanding the presence of Madame Călděrōn, and two or three aides-de-camp of the Governor, the curiosity excited by the first appearance of an English woman was so ungovernable, that the great market-place, through which the carriage had passed, transferred in a moment by far the largest portion of its inmates to the Cathedral, where the crowd soon became so great, that, although no incivility was intended, it was quite impossible for us to remain. La Puebla contained, at that time, a Lazzaroni population nearly as numerous as that of the Capital; a naked and offensive race, whom you cannot approach without pollution, or even behold without disgust.

I do not know any thing in nature more hideous than an old Indian woman, with all the deformities of her person displayed, as they usually are, by a dress which hardly covers a tenth part of her body; and in La Puebla, in consequence of the numerous convents in which alms were distributed, these objects were particularly numerous. We were too happy to escape by a different door from that by which we had entered, and to take refuge in the carriage.

We left La Puebla on the 22d of March, and slept at Săn Mărtīn, taking the road through Chŏlūlă to that place, in order to obtain a better view of the old Mexican Tĕŏcālli, or Pyramid, of which Humboldt's work contains so detailed a description. The base of this Pyramid comprises a square of about 1773 feet; the height is 54 metres, or 177 feet. It is truncated, and, on the spacious platform in which it terminates, the Conquerors have erected a Chapel, as if to mark the substitution of another creed, and another race, for the nation by whose united exertions this stupendous monument must have been raised. The whole mass is formed of alternate layers of unburnt bricks and clay, and is now overgrown with thick shrubs, amongst which clouds of Tortolas, (a small wood pigeon,) are found. Its structure is said by Baron Humboldt to present a curious analogy with that of the Temple of Belus at Babylon, and of the Pyramids of Egypt.

Its object was undoubtedly religious, but as its construction is ascribed to the Toltecs, a nation

which preceded the Aztecs in their emigration towards the South, the exact nature of the rites to which it was dedicated can only be conjectured. It may have served for the performance of human sacrifices in the sight of the assembled tribe; or as a place of defence in the event of an unexpected attack:—perhaps the two objects were combined, for, in the siege of Mexico, the most obstinate resistance was made in the vicinity of the great temple, (which resembled in form, though not in size, the Teocallis of Chŏlūlă and Tĕŏtĭhuăcān,) from the summit of which the priests are said to have encouraged the warriors by whom the great staircase and platform were defended.

The view from the Pyramid of Chŏlūlă embraces the three great Volcanoes, and the Mălīnchĕ, with a finely cultivated country covering the intervening space. The town of Chŏlūlă lies immediately below the platform, reduced, like the rival State of Tlăscālă, which is separated from it by the Mălīnchĕ, to a mere shadow of its former greatness; but still indicating, by the size of its Plaza, the extent of ground which the city formerly covered. The fertility of the plain around is very great, as from the vicinity of the two great mountains Pŏpŏcătēpĕtl, and Ĭstăccīhuătl, a constant supply of water for irrigation can be obtained: it abounds in Haciendas de Trigo, (Corn estates,) many of which, in good years, are said to produce Wheat in the proportion of eighty to one to the seed. This fertility termi-

nates a little beyond Sān Mărtīn, where the passage of the mountains, that separate La Puebla from Mexico, commences.

Cortes, on his march towards Mexico, opened a road for his army between the two mountains, but this has long been abandoned, and the line of communication now passes to the East of Ĭstăccīhuătl, where, though the ground is very rugged, and in one part, (the Bărrāncă de Jūānĕs,) attains the height of 10,486 feet, carriages are nevertheless able to pass. From San Martin, which is seven leagues from La Puebla by the direct road, to the Venta de Tĕsmĕlūcŏs, (about three leagues,) the ascent is very gentle, amounting only to 557 feet: but in the next four leagues, which extend to Rio Frio, and the Bărrāncă de Juānĕs, there is a difference of 2,219 feet.

From the summit of the Barranca to the Valley of Tĕnōchtĭtlān, or Mexico, there is a gradual descent, which becomes almost imperceptible on reaching the Venta de Chālcŏ, where Humboldt found the elevation to be exactly the same as that of San Martin on the opposite side of the range, viz. 7,711 feet.

Nothing can be finer than the first view of the Valley of Mexico as it bursts upon you from a little above the Venta de Cōrdŏvă, with all its lakes, rocks, villages, and Haciendas, scattered around the Capital in one vast basin. It is impossible not to be struck with so magnificent a scene.

We had been detained too long in crossing the mountains, to attempt to reach Mexico on the evening of the 24th, and we accordingly took up our quarters for the night at the Hacienda de la Buena Vista, which, unlike many other Haciendas with names of equal promise, we found fully deserving of its appellation, from the beauty of its situation. It is just far enough within the range of mountains to render their outline distinctly visible, while it is sufficiently elevated above the valley to give the eye a very extensive range. All the best rooms of the house were, as usual, placed at our disposal; so that up to the last moment of our journey there was no diminution of those attentions, of which we had been the object from its commencement. In recording them I cannot be suspected of vanity, for they were not shown to me as an individual, but were intended to mark the feelings which the Mexicans, in general, entertain towards the country which I had the honour of representing; and most sincerely do I hope that those feelings may long remain unchanged.

On the morning of the 25th of March, we reached the Capital. We were met about two leagues from the gates by a number of English residents, not one of whom, with the exception of Mr. Ruperti, was established in the country at the time of my first visit, and their presence was alone sufficient to indicate the improvements which I was called upon, at almost every step, to remark. Not a house

was unoccupied, and the busy activity of the streets formed an agreeable contrast to their melancholy aspect in January 1824.

Indeed, from the moment that I landed, I had been struck with the progress which, in one year, the country had made. There was everywhere an appearance of more settled habits, more subordination amongst the military, and more respect for the civil authorities; while the long files of mules which we continually passed on their way from the Coast to the Capital, afforded evident proofs of an increase of activity in trade. In the town of Mexico it was already difficult to procure a tolerable house, without paying a Traspaso,* the amount of which competition had rendered enormous. In good situations I have known eight, ten, twelve, and even twenty thousand dollars paid, in order to obtain possession of nothing but bare walls and windows, with the probability of being obliged to lay out half as much more in order to make the house secure and habitable. In 1823, one fifth part of the sum would have been sufficient.

The distance from Rio Frio to the Venta de Cordova is five leagues; from thence to the Capital eight. The Hacienda of Buena Vista lies about half a league out of the direct road. The whole distance from La Puebla to Mexico may be taken

* A Traspaso is a fine paid by the tenant, for which he is to receive a compensation on giving up the house, not from the proprietor, but from the person who succeeds himself.

at 27 leagues, or 70 English miles. By sleeping at Rio Frio, the journey may be divided into two fatiguing days; but without a change of mules at the Venta de Cordova it is not easy to accomplish it. On horseback, the time employed depends entirely upon the number of relays.

In January 1826, on Mr. Morier's return from England with the second Treaty, circumstances occurred which made me particularly desirous to see him before his arrival in the Capital; and in order to accomplish this with the least possible loss of time, I stationed my own horses at proper distances upon the road. The first was placed at Īstăpălūcă, the second at Rio Frio, and the third at San Martin, while a fourth carried me the seven leagues from San Cosme to Īstăpălūcă. I left the gates of Mexico at half past seven o'clock, and reached General Calderon's house in La Puebla at a quarter past three, having accomplished the journey, without difficulty, in eight hours and a quarter, although, from the nature of the ground, it was not supposed that the distance could be performed in so short a time. I remained at La Puebla three days, Mr. Morier's arrival there having been unexpectedly delayed, and returned on the fourth to Mexico, in rather less time than before, being not quite eight hours upon the road.

During my short stay at La Puebla in 1826, I had an opportunity of observing the improvements which General Calderon's exertions had effected in the

appearance of the population. The State Congress had been induced by him to pass a law, by which every Lepero found naked or begging in the streets was condemned to labour at the works, which were undertaken by the Government for the improvement of the town, for the term of one month, at the end of which he was set at liberty, and provided with a decent dress, with the offer of employment if he chose to work, and the certainty of a double penalty if he relapsed into his former habits.

This law, which was most rigorously enforced at first, produced a wonderful effect; and, as it was accompanied by the introduction of an excellent night police, it soon freed La Puebla from the swarms of vagrants, by which it had been previously infested; and substituted order and decency for the disgusting licence, which prevailed amongst the lower classes at the period of my first and second visits.

I was present at the meeting of the State Legislature of La Puebla, which, though on a small scale, was conducted with all the formality that accompanies the opening of the Sessions of the General Congress in the Capital. In both, a general *expose* of the state of affairs is made; and this in the States, may be considered as the first step towards a regular system of statistics; for the Governor's report embraces all the details of the new territorial division, and enumerates the Towns, Pueblos, and Ranchos, comprehended in the territory, with an estimate

of their population and resources. I was much pleased with the eagerness with which many questions of local importance were discussed at General Calderon's table, where I met most of the members of Congress on the day that the sessions were opened. They were chiefly landed proprietors; not, perhaps, of very refined education, (for, under the guardianship of Spain, there were few Mexicans to whom that advantage was not denied,) but of much simplicity of manners, and possessing a practical knowledge of the evils, by the removal of which their own interests could be best promoted.

The most important question that has yet come before the Legislature of La Puebla, has been the claims of the Church for the arrears of interest due on money lent on mortgage, to the landed proprietors of the State, before the Revolution, which they have been prevented from paying by the general ruin of their estates during the civil war. From the great influence of the Church in La Puebla, and the determination which it at first evinced to insist upon the full extent of its dues, the discussion was attended with considerable difficulty; nor would it have been found easy to reconcile such opposite interests, had not the apprehension of an appeal to the Supreme Congress, on the part of the landholders, induced the clergy to consent to a composition, by which something is sacrificed by both parties, and thus the common loss pretty equally

borne by each. The necessity of such a concession on the part of the clergy, in a town where the great revenues of the Cathedral Chapter, and the personal influence of the Bishop unite in maintaining their power over the minds of the lower orders, may be regarded as no slight proof of the progress which Mexico has made towards emancipation from that thraldom, in which the Inquisition, and the splendour of the ecclesiastical establishments, combined to hold the country. Don Antonio Perez, the present Bishop of La Puebla, possesses all the qualities best calculated to render him the prop and support, in his own Diocese, of that system, of which he is now almost the sole representative in New Spain. With the most polished manners, and the most dignified address, he has considerable oratorical powers; and he adds to these merits that of dispensing with great liberality the large revenues of his See. He is a Creole too, (the first ever raised by the Court of Madrid to the episcopal dignity;) and all these advantages have given him an influence, such as no Spaniard could have hoped to exercise. In whatever country his lot had been cast, he must have been a distinguished man, for he possesses that power of accommodating himself to circumstances, which is, perhaps, the surest road to preferment, when accompanied by sufficient penetration to seize the happy moment for a change. In Spain he was an active member of the Cortes of Cadiz; and yet,

on the King's return in 1814, his name was at the head of the Persas, or party, which petitioned his Majesty for the immediate dissolution of that assembly. Raised in 1815 to the Bishopric of La Puebla, he addressed, upon his arrival, a Pastoral to the people of his Diocese, exhorting them to beware of the dangerous and heretical tendency of the Spanish Constitution; and yet, on the second Proclamation of that Constitution, in 1820, he contrived to conciliate, in a second Pastoral, all that he had then said of its defects, with the panegyric which it became expedient to pronounce upon its advantages.

I know few better models of political ingenuity than this curious paper, which Bustamante has given, at length, in his Cuadro Historico. It was headed by the text—"There is a time to speak, and there is a time to be silent," (Eccl. iii. v. 7,) and it must be admitted that in a country still involved in a great political struggle, where caution was consequently necessary in the choice of a subject, and much tact required in the mode of treating it, a happier selection could not easily have been made.

The State of La Puebla is divided into twenty-five Partidos, or districts, containing, in all, according to a Census taken after the great Epidemy in 1825, a population of 584,358 souls; or 681,751, if one sixth be added to the registered amount for unavoidable errors in the returns.

The names of all the Partidos, the situation of

which is at all correctly ascertained, will be found in the map.

The principal are Atlixco, which has a population of 31,657 inhabitants, and is celebrated both for its Corn lands, and for the famous Ăhŭahūetĕ, or Cypress, (*Cupressus disticha*,) which stands near the town. It is of the same kind as those of Chapultepec, but much exceeds them in size, being seventy-three feet in girth. The district of Guāuchĭnāngŏ has 26,086 inhabitants; Ŏmētĕpēc, 25,151; La Puĕblă, 34,756; Tĕpēācă, 43,713; Tĕhŭacān de las Grănādăs, 42,248; Hāpă, 38,389; and Zăcătlān, 47,129. All produce in great abundance the fruits either of *Tierra Caliente*, (for the territory of the State extends beyond the Western ridge of the Sierra Madre, down to the shores of the Pacific,) or those common to the rest of the Table-land. Thus cotton, rice, coffee, sugar, and a little cochineal, (near the confines of Oaxaca,) are grown in common with wheat, barley, maize, chile, and frijoles, as well as the fruits of almost every climate. With these the market of La Puebla is supplied in the greatest abundance; but agriculture is, in general, in a very depressed state, there being no mines to create a home market. The exportation of wheat, however, to Veracruz and Oaxaca, is stated in the Governor's report to be considerable, and is likely to increase. The Revenue of the State, in the whole year ending January 1826, was 633,625 Dollars, and the expences, (including all the Government

charges, both legislative and executive, as well as the contingent due to the Federation, which has been paid with great punctuality,) 629,070 Dollars; so that a balance of 4,555 Dollars was left in favour of the State, at the end of the first twelve months, in which the experiment of self-government had been tried.

The capital can hardly expect, under the present system of free intercourse with Europe, to regain its former importance, which depended, principally, upon the native manufactures of wool and cotton.

Its population, before the Revolution, amounted to 67,000: it is now much reduced, although not nearly so low as the Census of 1825 appears to indicate, La Puebla being still supposed to contain from forty-five to fifty thousand inhabitants. A large portion of these will, probably, be compelled to have recourse to agricultural labours for support, and as there is a complaint of a want of hands amongst the landed proprietors, the general interests of the State will gain by the suppression of a branch of industry in the towns, which could only be supported by a system of taxation upon all the rest; the produce of the looms of La Puebla, during the best times, being infinitely dearer than the European manufactures, by which they are replaced, even under the pressure of the enormous duties, which, by the old Tariff, were exacted upon them.

With the exception of my journey to La Puebla, I was unable, during the first twelvemonth after my

return from England, to make a single excursion to any distance from the Capital, although there were many places in its vicinity which, from their importance, either as mining districts, or as the seats of the most valuable agricultural produce of the country, I was anxious to visit. In February, 1826, however, I commenced a series of Journeys, which I continued, at intervals, during the whole remainder of my residence in Mexico, and in the course of which I visited in person all the most interesting portions of the Republic, South of Durango. I cannot but hope therefore, that it may be in my power to lay before my readers, some information respecting the general character and resources of New Spain; and although I feel that a journal, devoid as mine is of any extraordinary incidents, and consisting merely of a recapitulation of the every-day difficulties of a traveller's life in passing through a wild country, can possess but few attractions, yet as I know no other mode of conveying an equally good idea of the peculiarities which I wish to describe, I shall adopt this form in the narration upon which I am about to enter; subdividing my journeys into Sections, in order to render more distinct my account of the most interesting districts.

Before I commence, however, upon this plan, it may be as well to mention a few particulars respecting the country in the vicinity of the Capital, and to give my route from thence to the valleys of Cŭernăvāca and Cŭautlă Ămīlpăs, in which are situ-

ated the great Sugar Estates, an account of which is given, in part, in the Third Section of the First Book.

The most interesting object in the valley of Mexico is the vast system of drainage, by which the Capital is protected against the periodical inundations of the lake of Tĕzcūcŏ, which, during the two first centuries after the conquest, threatened it repeatedly with destruction. Of this system the third Book of Baron Humboldt's Essai Politique contains a description, given with all the accuracy which distinguishes the works of that scientific traveller, upon every point to which his personal observations extended; and to this I must refer my readers for details, many of which will be found to possess the highest interest. I shall only attempt here to mention a few of the leading facts, in order not to leave entirely unnoticed a subject so worthy in every sense of attention. The valley of Tenochtitlan, or Mexico, forms a vast basin, which, although it is situated at an elevation of about 7,000 feet above the level of the sea, serves as a receptacle for the humidity, which filtres from every part of the lofty ridge of porphyritic mountains by which it is surrounded.

Not a single stream issues from the valley, with the exception of the Arroyo of Tĕquīsqŭiāc, but it receives the waters of the rivers Păpălōtlă, Tĕzcūcŏ, Tĕōtlhŭacān, Gŭadălūpĕ, Păchūcă, and Guautĭtlān, by the accumulation of which the four great lakes of Chalco, (and Xochimilco,) Tezcuco, San Crĭstōbăl,

and Zŭmpāngŏ, are formed. These lakes rise by stages as they approach the Northern extremity of the valley, the waters of the lake of Tezcuco being, in their ordinary state, four Mexican varas and eight inches lower than the waters of the lake of San Cristoval, which again are six varas lower than the waters of the lake of Zumpango, which forms the Northernmost link of this dangerous chain.

The level of the great square (Plaza Mayor) of Mexico, is exactly one vara, one foot, and one inch above that of the lake of Tezcuco, and is consequently nine varas and five inches lower than that of the lake of Zumpango; a disproportion, the effects of which have been the more severely felt because the lake of Zŭmpāngŏ receives the tributary streams of the river of Guautitlān, the volume of which is more considerable than that of all the other rivers, which enter the valley, combined.

In the inundations to which this peculiarity in the formation of the valley of Mexico has given rise, a similar succession of events has always been observed. The lake of Zŭmpāngŏ, swollen by the rapid increase of the river Guautitlan during the rainy season, forms a junction with that of San Cristōbăl, and the waters of the two combined burst the dikes which separate them from the lake of Tezcuco. The waters of this last again, raised suddenly more than a vara above their usual level, and prevented from extending themselves to the East and South-east by the rapid rise of the ground in that direc-

tion, rush back towards the Capital, and fill the streets which approach nearest to their own level. This was the case in 1553, 1580, 1604, and 1607, in each of which years the Capital was laid entirely under water, and the dikes, (Albaradones,) which had been constructed for its protection, destroyed. The rapid succession of these misfortunes at length compelled the Government to turn its attention to some other mode of averting the danger; and in 1607 an engineer called Enrique Martinez, was commissioned by the Marquis of Salinas, who was then Viceroy, to attempt the drainage of the lake of Zumpango by the stupendous canal now known under the name of the "Desague de Huĕhŭetōcă.

The plan of Martinez appears to have embraced two distinct objects, the first of which extended to the lakes of Tezcuco and San Cristoval, while the second was confined to the lake of Zumpango, the superfluous waters of which were to be carried into the valley of Tula, by a subterraneous canal, into which the river Guautitlan was likewise to be compelled to flow.

The second of these projects only was approved of by the Government; and the line of the canal having been traced by Martinez between the Cerro (mountain) of Sincōqŭe and the hill of Nŏchistōngŏ, to the North-north-west of Hŭehuĕtōcà, where the mountains that surround the valley are less elevated than in any other spot, the great subterraneous gallery of Nŏchistōngŏ was commenced on the 28th

November, 1607. Fifteen thousand Indians were employed upon this work, and as a number of air-shafts (lumbreras) were sunk, in order to enable them to work upon several different points at once, in eleven months a tunnel (Socabon) of 6,600 metres* in length, three metres five in breadth, and four metres two in height, was concluded.

From the Northern extremity of this Socabon, (La boca de San Gregorio,) an open cut of 8,600 metres conducted the waters to the Salto (fall) of the river Tula, where, quitting the valley of Mexico, they precipitate themselves into that of Tula, from a natural terrace of twenty Mexican varas in height, and take their course towards the Bar of Tampico, where they enter the Mexican Gulph. An enterprize of such magnitude, concluded with such extraordinary expedition, could hardly be free from defects; and Martinez soon discovered that the unbaked mud bricks, (Tĕpĕtātĕ,) of which the interior of the Socabon was composed, were unable to resist the action of the water, which, being confined within narrow limits, was at times impelled through the tunnel with irresistible violence. A facing of wood proved equally ineffectual, and masonry was at last resorted to; but even this, although successful for a time, did not answer permanently the purpose for which it was intended, because the engineer, instead of an elliptical arch, constructed nothing but a sort

* The Metre is equal to 39,371 English inches.

of vault, the sides of which rested upon a foundation of no solidity. The consequence was, that the walls were gradually undermined by the water, and that the vault itself, in many parts, fell in.

This accident rendered the Government indifferent to the fate of the gallery, which was neglected, and finally abandoned in the year 1623, when a Dutch engineer, by name Adrian Boot, induced the Viceroy to resume the old system of dykes and embankments, and to give orders for closing the Socabon of Nochistongo. A sudden rise in the lake of Tezcuco caused these orders to be revoked, and Martinez was again allowed to proceed with his works, which he continued until the 20th June, 1629, when an event took place, the real causes of which have never been ascertained.

The rainy season having set in with unusual violence, Martinez, either desirous to convince the inhabitants of the Capital of the utility of his gallery, or fearful, (as he himself stated,) that the fruits of his labour would be destroyed by the entrance of too great a volume of water, closed the mouth of the Socabon, without having communicated to any one his intention to do so. The effect was instantaneous; and in one night the whole town of Mexico was laid under water, with the exception of the Plaza Mayor, and one of the suburbs. In all the other streets the water rose upwards of three feet, and during five years, (from 1629 to 1634,) canoes formed the only medium of communication between

them. The foundations of many of the principal houses were destroyed; trade was paralized; the lower classes reduced to the lowest state of misery; and orders were actually given by the Court of Madrid to abandon the town, and to build a new Capital in the elevated plains between Tăcŭbă and Tăçŭbāyă, to which the waters of the lakes, even before the conquest, had never been known to extend.

The necessity of this measure was obviated by a succession of earthquakes in the dry year of 1634, when the surface of the valley was cracked and rent in various directions, and the waters gradually disappeared; a miracle for which due credit should be given to the Virgin of Guadalupe, by whose powerful intercession it is said to have been effected.

Martinez, who had been thrown into confinement in 1629, was released upon the termination of the evils which his imprudence was said to have occasioned; and again placed by a new Viceroy, (the Marquis of Ceralvo,) at the head of the works, by which similar visitations were to be averted in future. Under his superintendence the great dike, or Calzada of San Crĭstōbăl was constructed, by which the lake of that name is divided from that of Tĕzcūcŭ. This gigantic work, which consists of two distinct masses, the first one league, and the second 1,500 varas in length, is ten varas in width, (or thickness) throughout, and from three and a half to four varas in height. It is composed entirely of

stone, with buttresses of solid masonry on both sides, and three sluices, by which, in any emergency, a communication between the lakes can be effected, and regulated at the same time. The whole was concluded, like the gallery of Nŏchistōngŏ, in eleven months, although as many years would now be required for such an undertaking. But in those days the sacrifice of life, (and particularly of Indian life,) in public works, was not regarded. Many thousands of the natives perished before the Dĕsāgŭe was completed; and to their loss, as well as to the hardships endured by the survivors, may be ascribed the horror with which the name of Hŭehŭetōcă is still pronounced by their descendants.

It is not my intention to follow the progress of the canal of Hŭehŭetōcă through all the various changes which occurred in the plans pursued with respect to it from 1637, when the direction of the works was again taken from Martinez, and confided to the Monks of the Order of San Francisco, until 1767, when, under the Viceroyalty of the Marquis de Croix, the Consulado, or corporate body of merchants of Mexico, engaged to complete this great national undertaking. The necessity of converting the Socabon of Martinez into an open cut, (Tajo abierto) had long been felt, it having been found impossible to prevent the Socabon from being continually choked up by the sand and rubbish deposited by the water on its passage; but as the work was only prosecuted with vigour, when the danger

of an inundation became imminent, and was almost suspended in the dry years, 2,310 Mexican varas of the northern part of the Gallery remained untouched, after the expiration of one hundred and thirty years, when the Consulado was entrusted with the completion of the arduous task. As the old line of the gallery was to be preserved, it became necessary to give the cut, which was to be sunk perpendicularly upon it, an enormous width at the top, in order to prevent the sides from falling in; and in the more elevated parts, between the mountain of Sÿncōqŭe and the hill of Nŏchistōngŏ, for the space of 2,624 feet, the width across varies from 278 to 360 feet, while the perpendicular depth is from 147 to 196 feet. The whole length of the cut, from the sluice called the Vertideros to the Salto of the river Tula, is 67,537 feet, or 24,530 Mexican varas. The highest point of the hill of Nŏchistōngŏ, is that called Boveda Real, and it would be difficult when looking down from it upon the stream below, and following with the eye the vast opening through which it seeks an issue, to conceive that the whole is indeed the work of man; did not the mounds on either side, as yet but imperfectly covered with vegetation, and the regular outline of the terraces, denote both the recency of its completion, and the impossibility of attributing it to any natural convulsion.

"The Obra del Consulado, as the open cutting is called, was concluded in the year 1789. It cost nearly a million of dollars; and the whole expence

of the drainage, from 1607 to the beginning of the present century, including the various projects commenced, and abandoned when only partially executed, the dikes connected with the Desague, and the two canals, which communicate with the lakes of San Cristōvăl and Zŭmpāngŏ, is estimated at 6,247,670 dollars, or 1,249,534*l.* sterling. It is supposed that one-third of this sum would have proved sufficient to cover all the expences, had Martinez been furnished, in the first instance, with the means of executing his project upon the scale which he had judged necessary; for it is in the reduced dimensions of the gallery of Nŏchistōngŏ, which was never equal to the volume of the water, to which, at particular seasons, it afforded an outlet, that all the subsequent expenditure has originated.

The works are now in a very bad state, having been entirely neglected during the Revolution. In a report drawn up by Don Jose Maria Moro, in October 1823, the necessity of immediate repairs is forcibly demonstrated; but as the last few years have been remarkably dry, it is probable that the old Spanish system of procrastination will be adhered to, and that nothing will be done until the dread of an inundation compels the Government to turn its attention to the subject. A few thousand dollars would suffice to clear the Tajo of the accumulations of earth and rocks, by which the passage of the water is at present obstructed; but as these, if suffered to remain, form a sort of dam,

the vicinity of which the water accumulates until hollows out a basin, or reservoir, by undermining banks on each side, the consequences will, in a years, become very serious, and may probably der the whole work useless, at the moment when ervices are most indispensable.

in an effective state, the canal of Nochistōngo garded as fully sufficient to ensure the Capital st any risk of inundation from the North; but e South, as Humboldt very justly observes, ecautions have been taken; not because there is danger of a similar visitation, but because that da has not so frequently occurred. The level of lakes of Chālcŏ, and Xŏchĭmīlcŏ, which are dis ished by the peculiarity of their water being swe instead of brackish, like that of the other three kes, is higher by one vara and eleven inches than hat of the Plaza Mayor of the Capital, and, con ently, exceeds by two varas and two feet th an level of the waters of the lake of Tezcuco. A tion between these two lakes would, therefore, be productive of exactly the same effects, as t of the Central and Northern lakes; against ch so many precautions have been thought necessary. In the great inundation, which took place fore the Conquest, the history of which has been preserved by the Aztec historians, the case actually occurred, and the water rose, in the streets of Mexico, to five and six metres above its ordinary level, although not one drop of water from the Northern

of the drainage, from 1607 to the beginning of the present century, including the various projects commenced, and abandoned when only partially executed, the dikes connected with the Desague, and the two canals, which communicate with the lakes of San Cristōvăl and Zŭmpāngŏ, is estimated at 6,247,670 dollars, or 1,249,534*l.* sterling. It is supposed that one-third of this sum would have proved sufficient to cover all the expences, had Martinez been furnished, in the first instance, with the means of executing his project upon the scale which he had judged necessary; for it is in the reduced dimensions of the gallery of Nŏchistōngŏ, which was never equal to the volume of the water, to which, at particular seasons, it afforded an outlet, that all the subsequent expenditure has originated.

The works are now in a very bad state, having been entirely neglected during the Revolution. In a report drawn up by Don Jose Maria Moro, in October 1823, the necessity of immediate repairs is forcibly demonstrated; but as the last few years have been remarkably dry, it is probable that the old Spanish system of procrastination will be adhered to, and that nothing will be done until the dread of an inundation compels the Government to turn its attention to the subject. A few thousand dollars would suffice to clear the Tajo of the accumulations of earth and rocks, by which the passage of the water is at present obstructed; but as these, if suffered to remain, form a sort of dam,

in the vicinity of which the water accumulates until it hollows out a basin, or reservoir, by undermining the banks on each side, the consequences will, in a few years, become very serious, and may probably render the whole work useless, at the moment when its services are most indispensable.

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bather must necessarily have been confined during his ablutions. It seems more probable that it may have served to receive the waters of a spring, since dried up, as its depth is considerable, while the edge on one side is formed into a spout.

Chapingo is one of the finest specimens of Mexican Haciendas. The house was built by the Jesuits, to whom the estate originally belonged, and purchased of the Government, on the dissolution of the Society of Jesus, by the ancestor of the present Marchioness of Vibāncŏ, out of the proceeds of the Mine of Bărrāncŏ, at Bŏlāñŏs. The lands about it are exceedingly rich, as an abundant supply of water for irrigation is drawn from a reservoir, into which a number of little streams from the neighbouring mountains are conducted. The vicinity of the Capital ensures a ready market, and this gives so great a value to the crops, that the income derived from the estate seldom falls short of 60,000 dollars, (12,000*l.*) per annum. The Trōgĕs, or buildings erected to receive the grain, are very magnificently constructed; they are high, airy, and paved with large flat stones, varying in length from seventy to ninety feet. The accompanying drawing will convey an idea of the style of building, which is, however, much superior to that of the generality of country houses in New Spain, and must not be taken as a criterion for others. Chăpīngo lies about nine leagues from Mexico, and nearly as far from San Juan de Tĕŏtĭhŭacān. The road to this last

place runs between the lake of Tezcūco and the range of hills which form the Eastern boundary of the valley: that to the Capital passes near the Southern extremity of the lake, and joins the great La Puebla road about four leagues from the gates of the town. We returned to Mexico by this route after an absence of six days, during which time we had made the tour of the whole valley, with the exception of the portion lying between Chalco and San Ăgŭstīn dĕ lăs Cūēvăs, which I visited subsequently on my way to and from Cūērnăvācă and Cūāūtlă.

As the season was advancing, and the heat increasing daily in the *Tierra Caliente*, I resolved not to defer my expedition to that place, and commenced my journey within a very few days after returning from Chăpīngŏ. The distance from Mexico to Cūērnăvācă does not exceed twenty leagues, (fifty miles,) but it is difficult to perform it in a single day on account of the passage of the mountains to the South of the valley, both the ascent and descent being exceedingly rocky and precipitous; I therefore left the Capital on the evening of the 25th of February, and slept at the village of San Agustin de las Cuevas, about four leagues off, where I was again indebted for lodgings to the hospitality of the Marquis of Vibanco. San Agustīn was formerly the favourite residence of the nobility and great merchants of the Capital, whose houses and gardens formed, by degrees, a village, the appearance of which, in 1803, Humboldt describes as singularly

beautiful. It was abandoned during the Revolution, being exposed to the attacks of Insurgent parties from the mountains, and is now only frequented during the great fair, which is held there annually, in the month of May. The object of this fair being merely amusement, it is attended by every creature in Mexico that can save, beg, or borrow a dollar for the occasion. The houses at San Agustin are taken many months beforehand, and from three to five hundred dollars rent is frequently paid for the three days. Amongst the ladies it is the etiquette to change their dresses four or five times in the course of the day; once, for the early promenade before breakfast; again for the cockpit, which opens at ten o'clock; a third time for dinner; a fourth for the Calvario, where a circle is usually formed for dancing; and a fifth for the public ball, which commences at eight o'clock, and lasts till twelve. Immense sums of money are won and lost, in the course of the day, by the men, both in betting upon their cocks, and at the Monte tables, one of which is to be found in almost every house. There are silver Montes for the lower classes, but at all the respectable tables nothing but gold is seen, and no smaller stake than a doubloon, (an onza, about 3*l.* 4*s.* English money,) allowed. The bank at these varies from 1,500 to 3,000 doubloons. Fifty or sixty of these, (about 200*l.*) are an ordinary stake upon the turn of a card; but I have seen as many as six hundred and twenty risked and won.

There is no limit whatever to the stake, and unfair play is out of the question, but the chances are so much in favour of the table, that few persons continue winners for any length of time.

During the whole fair the streets and squares of San Agustin are filled, by day and by night, with crowds of people, who sleep *à la belle étoile*, or take shelter under the carriages, with which the Plaza is crowded. Provisions of all kinds are to be found in booths erected for the occasion; horses and mules are picketed in every direction round the town; temporary huts are raised with boughs and mats, and as a profusion of flowers is used in all these structures, nothing can be more variegated than the appearance of this motley scene. In the evening, the cockpit is carpeted, and lighted up with chandeliers; cushions are placed upon the benches, looking-glasses suspended from the wooden pillars, and, as the roof, which is of shingles, is concealed, in part, by a quantity of green boughs, the whole forms a pretty, circular ball-room, in which all the *élite*, and all the refuse, of Mexican society may be seen assembled at the same time. The lower classes, however, are excluded from the centre of the house, into which no one improperly dressed is admitted, and forced to take their seats upon the higher tiers of benches. Here they exercise the usual privilege of the one-shilling gallery, by applauding most vociferously the performances of any lady, whose style of dancing happens to please them, and by calling

occasionally for the Jărāvĕ, the Pĕtĭnĕră, or other dances of the country, with an exhibition of which they are not unfrequently gratified.

On the 26th of February I left San Ăgŭstīn at a very early hour. The ascent commences almost immediately, and is rendered doubly toilsome by the Ărenāl, a bed of deep blue sand, that extends over a space of about two leagues, and exhausts both the horses and mules, by the treacherous nature of the footing which it affords them. The road passes by the Village of Ăjūscŏ, and the Venta del Guārdă, from whence it winds its way through a succession of rocks, and pine-woods, to the Cruz del Mărqūes, a point about 2,360 feet above the level of the Capital. Here the descent to Cūernăvācă begins and continues uninterruptedly for nearly four leagues to the Pueblo of Jŭchĭlāc, where the first indications of an approach to the *Tierra Caliente* appear. These increase rapidly in the direction of Cūernăvācă, until, in the plains immediately below the town, the climate and the productions of the Coast replace, at once, those of the Table-land.

The transition is the more sudden, because, on the Pacific side, the Valleys are sheltered from the North winds, which have so extraordinary an effect upon the vegetation upon the Eastern slope of the Cordillera. Thus Cūernăvācă, although 1,093 feet higher than Jălāpă, possesses all the characteristics of the country about Plan del Rio, or Puente del

Rey. The inhabitants have the same dark tint; the sky the same glowing aspect; and although the vomito is unknown, in the rainy season agues prevail, of so violent a nature, as almost to partake of the character of the typhus, and to be hardly less injurious in their effects upon the constitution.

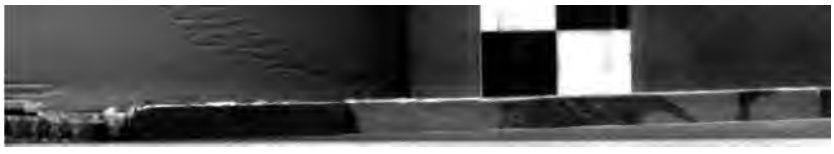
The town of Cuernavaca lies 2,040 feet lower than Mexico, and 4,400 feet below the Cruz del Mărqūes, which is the highest point of the intervening ridge. It is a place of no great importance in itself, and only derives interest from the richness of the surrounding district. During the two days which I passed there, I visited two of the great Haciendas de Azucar, (Sugar Estates,) mentioned in the first Book, San Găbrĭēl and Ātlăcŏmūlcŏ, the first of which belongs to the family of Yērmŏ, the second to that of the Duke of Monteleone, the present representative of the house of Cortez. I found in both the same exuberant fertility of soil, the same abundance of water for irrigation, and the same inattention to comfort or cleanliness, in the vicinity of the house, which, in the valleys of Cūāūtlă and Cūērnăvācă, seldom denotes by its appearance the value of the estate. The average produce of San Găbriēl is calculated at forty thousand Arrobas of sugar (each of 25lbs.); that of Ātlăcŏmūlcŏ does not exceed thirty thousand; in addition to which, however, there is a Coffee plantation containing about fifty thousand young plants, which appeared to be in a very thriving state. The distance of these

Haciendas from Cuernavaca varies from two to three leagues. The heat, which I found very oppressive after ten o'clock, prevented me from extending my excursions farther, although the beauty of the country, and the abundance of game, (particularly hares and quails,) would have induced me, at any other time, to prolong my stay.

The valley of Cūernăvācă is separated from that of Cūautlă by a ridge of elevated ground, commencing a little beyond Ātlăcŏmūlcŏ, and extending about four leagues to the South-east, where it terminates in two singular hills, called Las Tĕtīllăs. From these you descend at once to a lower terrace, which begins at the foot of the ridge, with the village of Yaŭtĕpēc, one of the most beautiful spots that I recollect having ever seen. The riches of the inhabitants consist in the groves of orange-trees, by which their houses are surrounded, and from which both the Capital, and the town of La Puebla, are supplied with this fruit. One of the numerous streams that descend from the Table-land, runs through the Pueblo, dispensing fertility on every side; a little garden is attached to each cottage; and the brilliant whiteness of these dwellings contrasts, in a very pleasing manner, with the dark green of the orange-trees behind, broken at intervals by the bright hue of the fruit. Yaŭtĕpēc is about five leagues from Cuernavaca, and four from Cŏcŏyōc, a Hacienda belonging to Don Antonio Vĕlāscŏ, the father-in-law of General Tĕrān, who had the good-

ness to allow me to take up my residence there for a few days, as the most convenient spot for visiting both the town of Cuautlă, and the neighbouring estates, for most of which I had letters from General Bravo, and other friends. With the exception of about one league of solid rock, upon which our horses could with difficulty keep their footing, the whole road from Yaŭtĕpēc lay through a richly cultivated country, watered by a hundred rivulets, and studded with Haciendas, the most considerable of which, (Săn Cārlŏs,) we visited on our way. Nothing could be finer than the scenery; and the vigorous growth of the canes, though planted much more closely than is usual in the West Indian Islands, attested the richness of the soil, which, without the aid of manure, seldom fails to yield a most abundant crop. Dr. Wilson, a friend by whom I was accompanied upon this occasion, and who, from a long residence in Jamaica, was better qualified than myself to judge of the relative capabilities of the two countries, was much struck with this circumstance, and pointed it out to me as well worthy of attention.

Notwithstanding the heat, by commencing our excursions at a very early hour, we contrived to visit, during the two days that we passed at Cŏcŏyōc, both the town of Cuāutlă Amīlpăs, (which I was curious to see from its connexion with the history of the Revolution, and the exploits of Mŏrēlŏs,) and the Haciendas of Păntĭtlān, Căsăsăno, Săntă



Inĕs, Căldĕrōn, and Cŏhăhuistlă. This was sufficient to give us a very good idea of the mode in which the great sugar plantations of Mexico are conducted, as well as of their extent; but upon both these subjects, all the most essential details will be found in the Third Section of the First Book, and a reference to this will render it superfluous for me to enter here into any farther particulars.

The population of the Valley bears evident traces of a recent mixture of African blood. The colour of the skin is darker, and the lank hair, peculiar to the aborigines, is exchanged for curly, or woolly locks. The men are a fine athletic race, but wild, both in their appearance and habits; they delight in glaring colours, as well as in the noisy music of the negroes, and form, when heated with liquor, and dancing after the labours of the day, a striking contrast to the meek and submissive demeanour of the Indians on the Table-land.

Cuāutlă Ămīlpăs, which is four leagues from Cŏcŏyōc, and thirteen from Cuernăvācă, has recovered entirely from the ravages of the first years of the Civil War. The Indian suburb is exceedingly pretty, but the town itself, from the lowness of the houses, which are mostly of Tĕpĕtātĕ, and the breadth of the streets, seems very little calculated to resist the attack of a regular force. The defence made there by Morelos, with a few hundred men, against the whole Viceregal army, commanded by Căllējă in person, is hardly a greater proof of deter-

mination on his part, than of the want of courage on that of his adversaries.

On the 4th of March, I quitted Cŏcŏyōc; not without regret, for although the house is bad, nothing can be more striking than the view of Pŏpŏcătēpĕtl from the balcony, where we used to sit, and enjoy the evening breeze, after the fatigue of our morning's ride. A coffee plantation, too, intersected by walks of orange trees, and kept in the nicest order, is always a beautiful object; and to an eye accustomed to the stunted vegetation of the Table-land, the foliage even of the more ordinary trees, in which the *Tierra Caliente* abounds, must always be a relief.

The ascent towards the Capital commences very abruptly. On the outskirts of the Valley of Cūautla, are two little Ranchos, near which most of the bananas are grown with which the Mexican market is supplied. The change from the cane huts of these Indians, buried amongst the leaves of the Platano Arton, to the Pine forests, that occupy the region immediately above, is extremely sudden. Through these you labour on for about eight leagues, in the course of which two or three uninteresting Pueblos are passed, when you commence a very gradual descent into the valley of Mexico, which we entered to the South of the town of Chalco, where we passed the night. It would not have been impossible to reach the Capital the same evening, as the distance did not exceed nine leagues; but our horses had

been feasting upon the green tops of the sugar cane during their visit to *Tierra Caliente*, and were so weakened by this heating food, that they were quite exhausted before we reached Chālcŏ, although that town is not more than eleven leagues from Cŏcŏyōc. We were therefore compelled to give them a night of repose and hard food, after which we reached Mexico at an early hour on the following morning. (March 5.)

SECTION IV.

PREPARATIONS FOR TRAVELLING IN MEXICO.—JOURNEY TO THE MINING DISTRICTS OF TLALPUJAHUA.

So little was known in the city of Mexico of the manner in which the affairs of the great English Mining Companies were conducted, and such contradictory reports prevailed with regard to the system pursued by them, that I determined to seek, by personal observation, that information which I found it impossible to draw from any other source. In this I was influenced not merely by the interest that I naturally felt in the issue of enterprises, in which British capital to so large an amount was invested; but by a wish not to render myself responsible, in the reports which I might be called upon to transmit to His Majesty's Government, upon the subject, for any errors but my own.

In the Capital, the opinions of most people seemed to be influenced by feelings of merely a personal

nature. There were so many prepossessions in favour of particular districts, so many prejudices against others, and such rivalities amongst the agents or friends of the different Companies, that I found it hopeless to attempt to arrive at any reasonable conclusion with regard to their prospects while at a distance from the scene of action; and, under this impression, I resolved, in any of those inaccuracies into which the want of data might betray me, to ensure to myself the satisfaction of knowing that I had, at least, done all that in me lay to avoid them.

In preparing for the execution of a plan, which rendered it necessary for me to undertake a series of journeys amounting in their aggregate to nearly three thousand English miles, I endeavoured to lessen, as much as possible, the inconveniences with which travelling in Mexico is attended, by taking beforehand all those little precautions, the neglect of which in the first instance is sure to occasion so much subsequent vexation and delay. I accordingly procured the very best horses that were to be obtained, both for myself and my servants, and took equal care in the selection of my baggage, or carga mules, upon which, in fact, the whole comfort of a journey depends.

A Mexican inn, or even a second-rate Hacienda, contains little or nothing besides the bare walls. If the traveller be very much fatigued, he may stretch himself at full length upon the floor, or perhaps he may obtain the luxury of a table, which, as present-

ing a less uneven surface, forms a better substitute for a couch. To any thing beyond this he must not aspire, nor must he expect to find, except in the towns, any other provisions than tortillas and Chile. He therefore depends, both for rest and food, upon his own supplies, and of these he ought never to lose sight. In order to accomplish this, the carga mules should be of the best Durango breed, light and active, and able to continue at a trot before the horses thirty or forty miles, with a load of 150 or 160lbs. The Mexicans attach this load to the animal in a most slovenly manner, by merely balancing the packages upon a pad, composed of skins, and sackcloth stuffed with straw, and then girting them with such violence as frequently to injure the mule, by creating swellings either under the girths, or upon the withers, on which the whole load rests in going down hill. The packages too, require constant attention, and alteration, as the balance is destroyed by the roughness of the motion when travelling at a quick pace, although at a very slow walk, fewer changes are necessary. I found that so much inconvenience arose from the frequency of these stoppages on my way to Cuautla, that I determined on my return home to introduce an innovation, against which all my Mexican servants protested, until they were taught by experience how much it tended to diminish their own trouble.

I employed a French saddler recently established in the capital to make me four English packsaddles,

upon the model of one which had gone through the Peninsular war, each furnished with a tree, so as to prevent the load from resting immediately upon the mule's back, and these again provided with iron hooks on each side, to which a portmanteau or bed is attached by corresponding rings and straps. In the rainy season, an oilskin cover, or tarpaulin, is thrown over the whole, and secured by a broad leather girth; this serves to keep the load steady, while breechings and a breast-piece prevent the pack-saddle itself from slipping, even in the most precipitous roads. One of the trees was fitted up in a different manner from the rest, being provided with iron brackets, made to fit a canteen, which was slipped in between them, and secured by a single strap. From the moment that I adopted this system, I discarded all the clumsy Mexican "aparejos," and I had the satisfaction both of never having a mule afterwards with a sore back, and of seeing them perform their journeys with ease and convenience. My luggage generally consisted of a canteen, which contained cooking utensils, as well as a small breakfast and dinner set for four people, and formed a light load for one mule: one of Thompson's small brass camp beds, with a portmanteau to balance it, was allotted to a second mule: the third carried two boxes for wine, provisions, and other necessaries, of which we laid in a stock in the larger towns; and the fourth the beds of Dr. Wilson and Mr. Carrington, a young friend by whom I was

generally accompanied. A single muleteer, duly provided with his sabre and lasso, took charge of this detachment, which preceded the rest of the party; and in addition to him we were usually accompanied by three men servants, two Mexicans and an English groom, who, being all armed as well as ourselves, with pistols and sabres, besides two or three double-barrelled fowling-pieces, formed a party sufficiently strong to secure us against any danger of an attack from robbers. When once trained to European wants, I know no better travelling servants in the world than the Mexicans. They are a fine manly race, excellent horsemen, adepts in the use of that indispensable instrument the lasso, and capable of enduring every sort of fatigue. They eat any thing, always look respectably, if provided, as mine were, with the leather (Payo) dress of the country, and sleep upon the ground, wrapped in the manga, which each man carries behind his saddle, round your bed if you bivouac, or stretched across your room door at the Ventas, where, as every thing is open, you have seldom any other security than what the presence of your own attendants may give. In mine I used to feel the most perfect confidence, for, when treated well, I have found them capable of great attachment, and although I had not occasion to put them to any severe trial, I am convinced that in an emergency they would not have deserted me.

I know few sensations more pleasing in life than those which I have experienced when starting, thus

accompanied, upon one of my long expeditions, with all my party well mounted, a few spare mules and horses driven before us, and the certainty of finding, after traversing a new country, in the principal object of the journey, enough to gratify curiosity, and often to remove unpleasant doubts. There is something so wild and independent in the whole thing, that there are few people, who have stamina enough to support the fatigue, that do not learn to enjoy it. You forget Europe and all the mingled advantages and restraints of civilization, and trusting to your horse for carrying you to the place of your destination, and often to your gun for a meal upon the way, you care neither for mountains nor rivers, but take at once the shortest and the most picturesque road, or branch off to the east or the west, at pleasure, should there be any thing, on either side, to attract attention. The Mexican horses are admirably adapted to this sort of travelling. They are small, but active, and full of spirit; extremely light in hand, and ready to spring off at full speed upon the slightest motion of the rider. Many of them possess in addition to these good qualities that most invaluable requisite for the road, a passo, of the advantages of which no one, who has not tried it, can form an idea. The passo consists in a peculiar motion of the horse, by which the hind legs are drawn along the ground, sustaining nearly the whole weight of the body, while the fore are raised in high and graceful action; the rider, from the gentle movement

of the hind quarter, is hardly moved in his seat, while the horse before appears to be going at a trot, and does in fact move at nearly the same rate. A good passo horse will perform, with ease to himself, six miles in the hour, and will hold this pace over good ground for several successive leagues. I had one, known in Mexico by the name of the Mascarillo, (from a peculiar white mark on one side of the head) whose passo was so rapid as to keep any other horse nearly at a gallop: when at his full speed he was thought to move at the rate of ten or eleven miles in the hour, but this was an exertion which he could not sustain for any length of time. A more ordinary passo varies from four to six miles in the hour, seldom exceeding the one, or falling much short of the other. I never had above two of the first kind, one of which was a little brown horse which Mrs. Ward used to ride, the other a favourite of my own, a Rosillo, (or Roan) very fast, and with legs like a deer, but with such courage that he performed all my journeys with less injury to himself than others apparently of three times his strength. Dr. Wilson had a third of clumsier make, but an equally good passo, and it was curious to see with what ease these three creatures went over the ground, while all the rest of the horses were wearied out with their efforts to keep up with them. Passo horses of this description are valuable, and will sell, in any part of the country, for one hundred and fifty or two hundred dollars, (30*l.* or 40*l.*) while a trŏtŏn, or trotting horse

of the very best kind, may be bought for fifty dollars, (10*l.*) and might have been purchased for half the money in 1823, before the influx of English raised the prices, as it always does. Many people prefer mules to horses for a long journey, and, in a very mountainous country, they certainly answer best: they are useful, too, for servants; but for my own riding I should never employ them, for it was my delight to stop, wherever there was game in the vicinity of the road, and, after shooting for half an hour, to rejoin my party at a canter, which would spoil a passo mule, although it does no sort of harm to a horse. When kept at their regular pace, however, mules are most extraordinary animals, and seem capable of continuing at the rate of thirty miles a day, from January to December, without fatigue or inconvenience. I had one little chesnut macho, that had been with Mr. Hervey to the Interior, and afterwards both with him and Mr. Morier to the coast. It was then transferred to Mr. Baring, with whom it went to Tĕpīc, from whence it returned just in time for me to repurchase it at the commencement of my own travels. In all these it carried my muleteer, a very heavy man; and when, in April 1827, I transferred the two together to Mr. Stokes, to go over no inconsiderable portion of the same ground again, there was as little in the mule, as in the rider, to indicate the fatigues which it had undergone. I may say the same of a little black terrier, one of the two only dogs that survived the

journey from the coast. Four greyhounds and another terrier died mad upon the sands, within a league of Veracruz; but this little creature being younger, suffered less from the sun; and, from the moment that we reached the Table-land, formed, at once, an attachment to the mules, which continued unchanged during the whole of my stay. In defiance of heat and dust, the dog always accompanied the leading mule; at night he slept amongst the packsaddles, where his vigilance was of great use; and except to be fed, nothing ever induced him to enter a house. He still, I believe, continues the same career, as I thought it a pity, on my departure, to separate him from his friends, with whom he has since been to Catorce and Tĕpāntĭlān.

I shall finish this general outline of travelling in Mexico, by saying that in the hot months of May, July, and August, in the course of which, from the extreme dryness of the season in 1826, I was enabled to visit Tlălpŭjāhŭa, Tĕmăscāltĕpēc, Real del Monte and Zĭmăpān, we used to set off long before day-break in the morning; so that we usually got our day's journey over by twelve or one o'clock. In Mexico, you never stop upon the road to bait, but perform the whole distance, whatever it may be, without a halt. It is better for the horses and mules, as they have a longer time together for rest and food, which, in so hot a climate, they do not enjoy without water, and this cannot be given them, in any quantity, until the day's work is done. Nor

is there any thing in the arrangement inconvenient for the traveller, as it gives him time to dress and bathe before dinner, and afterwards to stroll about in the cool of the evening, where there is any thing to be seen, until the approach of darkness summons him to bed. It is then that the luxuries of musquito curtains and portable bedsteads are really felt, particularly if the length of the legs is calculated, (as it always should be) so as just to raise you beyond the maximum of a flea's leap. Sheltered from all annoyances of this kind, and extended in peace and comfort upon your elastic stretcher, you soon forget the fatigues of the past day, and are awakened at three the next morning, by your muleteers, ready to face those of the day to come. It always required an hour's work to saddle, and load the mules, make up the beds, and prepare a little stock of cold provisions, which we stopped to eat, at eight or nine o'clock, wherever water or Pulque was to be procured. If we got in extremely early, we had usually some books with us to pass the time, and for those who were not thus disposed, the kitchen, or the care of the animals, afforded occupation, as, in both, constant superintendence was necessary. On the whole, I found my journeys a most agreeable relaxation, after the confinement of the Capital. I ended them with regret; I look back to them with pleasure, and I should recommence them again to-morrow, with great satisfaction, were my profession to lead me again to a country as little known as Mexico, and

offering as much to excite attention, and recompense curiosity.

The first Mining district that I visited, after my return from Cuautla, was that of Tlălpŭjāhuă, which is situated upon the confines of the State of Valladolid, about 38 leagues, or 95 English miles, from the Capital. The road traverses the mountains that bound the Valley of Mexico to the West, and passes through Tăcŭbāyă and Săntă Fē to Lăs Crūcĕs, where the battle between the Insurgents, under Hidalgo, and the Viceregal troops, commanded by Truxillo, was fought in 1810. From this high ridge, (it is 10,882 feet above the level of the sea,) where a number of crosses and piles of stones still mark out the burying-places of the Indians who fell in the action, the descent towards the valley of Toluca commences, which is 785 feet more elevated than that of Mexico. The town of Lerma lies about a league from the foot of the mountains, upon the borders of the lake, from which the Rio Grande de Santiago takes its rise. This river assumes a different name, at first, in almost every village near which it passes, but is the same which, after fertilizing the Băxīŏ, and traversing the extremity of the Lake of Chăpālă, runs through a large portion of the State of Guădălăjāră, and finally discharges itself at San Blas into the Pacific. It contains a very considerable body of water, and is not fordable, even during the dry season, within a very few miles from its source.

Lerma possesses nothing remarkable as a town, except an inn, where, from the frequent visits of foreigners, both beds and provisions may be obtained, and where some attention to cleanliness is shown.

The place contains about 4000 inhabitants, and is surrounded by Maguey plantations, which produce most excellent Pulque. The distance from the Capital is twelve leagues.

From Lerma there are two roads to Tlălpŭjāhŭa; one of which passes through the city of Tŏlūcă, while the other, which is four leagues shorter, branches off to the North-west, and runs in a direct line to the town of Ĭstlăhūacă, (about twelve leagues from Lerma, and fourteen from Tlalpujahua,) where we slept. For nearly eight leagues we followed a bridle road called El camino de las Cajones, through a country covered with Haciendas of corn, or maize, and large grazing estates, over which immense herds of cattle are scattered. The plain is intersected with canals for irrigation, while the view, which is diversified by a number of villages rising in the distance, and bounded by the Nevada, or Snowy mountains, of Toluca to the extreme South, conveys an impression of fertility and abundance that is very pleasing. For about four leagues before we reached Ĭstlăhūacă, we travelled over an elevated and barren ridge; but cultivation re-appears in the vicinity of the town, (which stands on a little elevation upon the banks of the river Lerma,) and

continues across the plains of Tĕpētĭtlān, to the Hacienda of that name, (five leagues from Istlahuaca,) where the mountains of El Oro and Tlălpŭjāhŭa commence. Of the remaining nine leagues, the first four are barren and desolate; the five last extend through a succession of Pine forests, in the midst of which the Real of Tlălpŭjāhŭa stands.

The ancient village of San Pedro and San Pablo, now called Tlalpujahua, where the officers of the Company formed in England under that name reside, is situated in North latitude 19° 17′ 30″, West longitude 100°, 1′.15″, upon the borders of a little stream, which winds down the valley of Tlălpŭjāhŭa into that of Tĕpētōngŏ, where it joins the river of Tepetongo, which subsequently unites with that of Lerma. The town is environed by mountains covered with pines, the most considerable of which are Lă Sŏmēră, to the North-east, Săn Lŏrēnzŏ to the South, and the Cerro del Gallo to the East of the town: the first of these is 1,430 feet, the second 1,160 feet, and the third 851 feet, above the level of the bridge of Tlălpŭjāhŭa, which, again, is 822 feet higher than the town of Mexico, and 8,581 feet above the level of the sea.

It is upon the slope of the mountains by which the valley of Tlalpujahua is formed that the principal mines of the Company are situated, in the hollows, (Cañadas,) of Las Animas, Los Zăpătērōs, and Lăbōrdă. Their position is extremely favourable for drainage by adits; and the shafts are neither

difficult of access, nor at an inconvenient distance from the town, most of them being contained in a circle of two English miles.

The metalliferous veins of this district are found principally in the Phyllade, (Thonschiefer, or Clay Slate,) which contains in subordinate strata, 1. Le traumate, (Grauwacke;) 2. Le traumate schisteux, (Schieffrige Grauwacke, or Greywacke Slate;) 3. Le Calcaire, (Transition Limestone;) 4. Le Talcschisteux, (Talkschiefer;) 5. Le Feldspath Compacte, (Prismatic Feldspar of Jameson;) 6. Le Diabase, (principally composed of Prismatic Feldspar, and straight-edged Augit of Jameson; and 7. Quartz.

The veins of Laborda and Coronas vary in dimensions from 16½ to 5½, and 8¼ English feet: that of Las Virgenes attains in some parts, a width of 27½, and even 33 English feet; nor has any diminution, or falling off, been observed at the greatest depth, to which these veins have yet been explored.

The Ores contain Native Gold, (Hexahedral Gold of Jameson,) and Native Silver, (Hexahedral Silver;) which are found in small quantities. The Rhomboidal Silverglance (*l'argent antimonié sulfuré noir*) is most abundant; and next to it the Hexahedral Silverglance, or Argent Sulfuré. The Red Silver, or Argent Antimonié, Sulfuré *rouge*, is less common, but may frequently be found.*

* Having professed my ignorance of Mineralogy, I must state that I am indebted for these details to a manuscript report drawn up by Mr. Burkart, Principal Miner of the Tlalpujahua Com-

Of the former produce of the district of Tlălpujā-hua nothing certain is known. The great Cŏrōnăs vein was discovered at a very early period, and has been worked, with occasional intermissions, for upwards of two hundred years. The Cañada which bears La Borde's name, and to which he was indebted for his first fortune, was only discovered in 1743: there are no returns of the Silver raised from it during the great Bonanza, which gave it celebrity; but in stating it at twelve millions of dollars, in the eight years, during which the mines were worked, I take only half the estimate which is usually formed in Mexico of its amount. Tlălpŭjāhŭa lost much of its importance upon La Borde's removal to Tāscŏ, but the mines of the district were worked without interruption until the commencement of the Civil War, at which time, according to a Statistical account of the State of Valladolid published in 1822, by Don Juan, José, Martinez de Lizarra, from eighteen to twenty thousand dollars were expended weekly in the purchase of ores, and in the payment of the mining labourers.

In 1824, it has likewise been ascertained, that Ores to the amount of 100,000 dollars, were raised by the Buscones (Searchers); and in 1825, before

pany, from which I should venture to make farther extracts for the information of Mineralogists, did I not conceive that the results of Mr. Burkart's investigations will, in the course of time, be laid before the world by himself.

the arrival of the Company, 60,000 dollars more were laid out in a similar way by the only miner who had a command of capital in the district. But it was not by the insulated efforts of an individual that the injuries done by the Revolution could be repaired.

The State of Valladolid was constantly the scene of action between the contending parties; and as one of the Insurgent chiefs (Răyōn) occupied two fortified camps in the immediate vicinity of Tlălpujāhua, (the Cerro del Gallo, and Coporo,) this district was exposed, for several years, to all the horrors of the war. To escape from these, its inhabitants abandoned their homes; and, in June 1825, Mr. de Rivafinoli found, upon his arrival, most of the houses in ruins, and the mines without a building of any kind to denote their existence.* The population was so reduced, that one hundred and fifty workmen were procured with great difficulty, and although the surrounding country is remarkably fertile, supplies of every kind were scarce from the total ruin of the neighbouring Haciendas.

It was gratifying to behold the change which ten

* The shaft of a mine is always surrounded by a *Galera*, in which the tools, candles, powder, &c. are kept, and an account taken of the labourers, who enter or quit the mine, as well as of the ores raised by them. In the Galera the Mălăcātēs (horse-whims) are likewise placed; so that where two or more of these are at work, the space covered in is very considerable.

months had produced in all these respects. In May 1826, Tlălpujāhua presented one of the busiest scenes that it is possible to imagine: the population had increased from one to five thousand; above eighty houses had been repaired, or rebuilt; shops for the sale of English manufactures were opened in the Plaza; there was a market most abundantly supplied with all the necessaries of life four days in the week; and twelve hundred labourers found constant employment in the mines. Twenty-seven of the principal shafts had been already put into a thorough state of repair, and surrounded with the necessary buildings. In the Mines of Săn Ĕstēvăn, Cŏlŏrădīllă, Los Olīvos, Căpŭlīn, Concepciōn, Săntos Mārtĭrĕs, and Ŏcōtes, the works had already reached the Vein, and ore was raised in considerable quantities. In the others, Malacates had been fitted up upon the most improved plan, and the drainage was conducted with the utmost activity.

Of the extent to which the works of the Company are carried, some account has been given in the Second Section of the preceding Book: it is, however, necessary to add, that their contracts are mostly for the terms of thirty and thirty-five years; that in all their mines they have a full half share, or twelve Barras; that the Alimentos (or allowance made by the Company to the proprietors) are small, and are in every instance to be discontinued if a mine does not become productive within three years; and that although amongst the many contracts held

by the Company; there are undoubtedly some, from which no advantage can ever be derived, the command of all the mines in the district was indispensable in order to exclude competition, the ruinous effects of which, in other parts of Mexico, have been very severely felt.

Tlälpŭjāhŭa enjoys many advantages as a mining district. It is situated at a moderate distance both from the Capital and the Coast, in the midst of a country so fertile, that maize, which in Guanajuato and Mexico, sells for four and a half or five dollars the carga, (of 300lbs.) seldom rises there above two and a half or three dollars. Wood is equally abundant and cheap. Mining labour of all kinds is lower than in any of the neighbouring States. Few of the mines exceed one hundred and fifty varas in depth, and almost all are so situated as to facilitate their drainage by a single Adit, for a very considerable space below the deepest of their present workings. The ores of some contain a Ley de Oro, so considerable as to raise the value of the Marc to twelve and sixteen dollars; and in reducing these ores, the assistance of water power is almost always to be obtained.

At the period of my first visit, two Haciendas de beneficio (Santa Rosa and el Chimal) were completed, in each of which twelve stamps were at work, capable of pulverizing twenty-five cargas of ore, (of twelve Arrobas, or 300 lbs.) in the twenty-four hours. Another large Hacienda (San Rafael) was

in progress, with forty-eight stamps, and twenty-four Arastres, (crushing mills,) which it was thought would reduce from 600 to 800 cargas of ore in the week. I was very much struck with the appearance of all these works, which were planned by Mr. Moro, the engineer to the Company, and executed entirely by Mexican workmen, under the superintendence of another officer, (Mr. Enrico,) whose patience and assiduity triumphed over all the obstacles which the inexperience of the natives at first created. The water-wheel of San Rafael is twenty-seven feet in diameter, yet not a single European has been employed upon it, or upon the machinery connected with it, which now sets in motion forty-eight stamps, with a power that was thought insufficient in former times, to work more than six.

But both in this and in every other respect the Tlalpujahua Company has been admirably served. The director, Monsieur de Rivafinoli, possesses not only an active and indefatigable spirit himself, but the art of communicating a portion of this spirit to those by whom he is surrounded. I never saw more order and regularity than is shown in every part of his system; and although the gentlemen employed in superintending the works are natives of many different countries, there is an *esprit de corps* amongst them, which it is really pleasing to witness.* The

* The only place where I have ever seen any confusion at Tlalpujahua is at Mr. Rivafinoli's most hospitable table, where

Mexican proprietors, many of whom are entrusted with the superintendence of the works in their own mines, have become most useful assistants; and as the authority of the Church is employed wherever a change of machinery is contemplated, a solemn blessing being pronounced by the Cura, (a man of great talent and influence) upon the new machine, before it begins to work, each innovation is looked forward to by the natives as a *fête*, at which those who have been employed in the construction of the new works, receive a public reward.

Some of these details may be thought trifling; but as long as human nature remains constituted as it now is, more may be effected by attention to such trifles, than by the most beneficial projects when introduced without it. The conciliatory system adopted by Monsieur de Rivafinoli has given him an almost absolute authority in his district, and this, as long as the prospects of a Company are liable to be affected, (as they always must be) by the power which its agents possess of carrying into execution their projects, may always be regarded as an essential step towards success.

Doubts have been expressed with regard to the goodness of the mines of Tlalpujahua, and these, as there are no records of former produce, it is impossible for me to remove. It is difficult however to

Spanish, English, French, German, and Italian are spoken in such rapid succession as to convey a lively idea of the tower of Babel.

suppose, that in a district abounding in metalliferous veins, none of which have been worked to any considerable depth, whilst all are known to have been productive in earlier times, a Company which is in possession of every mine of any importance in the Real, and which is about to push its workings through a great extent of virgin ground, should not be amply repaid for its present advances. Its chances of success increase in proportion to the extent of its operations, as the veins are explored upon all the most essential points at once; while the mining works, which are under the direction of an active, cautious, and scientific man, Mr. Burkart, are sure to be conducted with economy, and executed with the greatest possible precision. With regard to time, a few months more or less are of little importance in an enterprise of such magnitude; and I should think even more highly than I now do of the prospects of the Tlalpujahua Company, were the Directors in England to forego for a year the hope of immediate returns, and to devote the whole of that time to the completion of the great Adit, by which the drainage of two-thirds of the district would be effected at once, and an immense saving made in the ultimate expences of the Association.

I remained at Tlalpujahua nearly a week, during which I visited all the mines which had been brought into activity up to that time, as well as the Haciendas, the most distant of which, San Rafael, is

situated about three leagues from the town. It was at that time unfinished, but in one of my subsequent visits I had the pleasure of seeing it completed, for I returned to Tlalpujahua both in September 1826, and January 1827, on my way from other districts to the Capital.

SECTION V.

JOURNAL OF A TOUR TO THE MINING DISTRICTS OF ZIMAPAN—SAN JOSÉ DEL ORO—LA ENCARNACION—EL CHICO—CAPULA, AND REAL DEL MONTE.

On the morning of the 12th of July, I left Mexico, and proceeded by the great Northern road to Hŭehŭetōcă, about eleven leagues from the Capital.

On the 13th, after following the same road three leagues in the direction of Tula, we struck off towards the East, over about five leagues of wretchedly barren and stony country, which extends to the plains of San Pedro, in the centre of which, on a very fertile spot, are situated the Hacienda and village of that name, where we arrived after five hours' travelling.

The plains of San Pedro led us to another Pedregal, or stony district, of still greater extent than the first, in the midst of which, five leagues from the Hacienda, stands a solitary venta, where we had

been informed that we could pass the night, but where we found that no sort of accommodation was to be obtained. We were therefore compelled to proceed, at a very late hour, towards Ĭtzmĭquilpăn, a town seven leagues farther on, there not being a single Pueblo, or Hacienda, between it and the Venta del Pĕdrĕgāl. The road continued to be stony and bad, with the exception of a few miles of sand covered with a thin brushwood. About two leagues from Itzmiquilpan there is an abrupt descent, of nearly two English miles, covered with masses of rock, amongst which it is hardly possible for horses to keep their footing. We did not reach the town till half-past eight o'clock, having left the Venta at half-past three in the afternoon.

Itzmiquilpan is remarkable for the beauty of its situation, and the richness of the vegetation for about a league in every direction around it. The town stands upon the banks of the river Tula, and is so completely sheltered by the neighbouring mountains, that it is almost a *Tierra Caliente;* in which every thing seems to partake of the luxuriancy peculiar to that climate. The inclosures are composed of Peruvian pepper-trees intermixed with roses, and covered with vines, which produce fruit in great abundance, as clusters of grapes are seen amidst the highest branches of the trees. By the side of the river, there are some magnificent cypresses, almost equal in size to those of Chapultepec: parasitic plants too are found in every direction, and even the

plumage of the birds appears more variegated. Itzmiquilpan was once a place of considerable importance, as a manufacture of Pita* was carried on there, from which most of the great mining districts were supplied with ropes: since the Revolution the demand for this article has diminished, and the inhabitants have turned their attention almost entirely to agriculture, for which they possess great local advantages from the facility of irrigation and the mildness of the climate. The town contains at present about three thousand Vecinos,† or a population of between nine and ten thousand souls: should the mines in the neighbouring districts recover their former importance, Itzmiquilpan will participate in the advantages of the change, as it is the great line of communication between Zĭmăpān, El Cărdŏnāl, La Pĕchūgă, and the Capital.

We passed the whole of the 14th at Itzmiquilpan, in order to rest our horses, which were much fatigued with the exertions of the preceding day. On the 15th we proceeded to Zĭmăpān.

From the moment that we quitted the immediate vicinity of Ītzmĭquīlpăn, we began to ascend, and continued to do so almost uninterruptedly for nearly five leagues. The chain of mountains which it is necessary to cross, is rugged and barren. There is hardly a tree of moderate size to be seen. A sort

* Pita is the thread made from the fibre of the Maguey.

† Vecino means householder.

of low prickly bush, interspersed with an immense variety of the Cactus, of all shapes and sizes, filled with Censontlis, and other singing birds, growing alternately on a sandy or strong soil,—such are the characteristics of the vegetation, where any vegetation is to be found. Nor is the descent on the Zimapan side less monotonous or fatiguing. It is very steep, and the path, which is covered with loose stones, is so narrow that it will seldom admit of two persons abreast. On the whole road we only crossed two small streams, at one of which we halted to breakfast.

The town of Zĭmăpān is situated about twelve leagues from Itzmiquīlpăn, and forty-two from the Capital: it is the head of a district, the mines of which were formerly very productive. During the Revolution they were suffered to go completely to ruin, having not only been abandoned by the real proprietors, but worked by Buscones, or common miners, who, unwilling to quit a place where they had long resided, have gained a subsistence, during the last sixteen years, by extracting ores from the upper levels and pillars of the principal mines, many of which they have entirely destroyed in the course of their operations.

With regard to the maximum of the Silver previously raised in the district, I was unable to obtain any information that could be depended upon, most of the registers having been lost during the Revolution, when the town was continually changing

masters. I am, however, in possession of a sketch of the principal mines, by which it appears that several of them have produced considerable Bonanzas in earlier times. For instance, Pămplōnă yielded 140,000 dollars in three years; La Iglesia took its name from the church that was built out of its proceeds; and from Cerro Colorado the family of Bustamante derived its fortune. There are many others which it is unnecessary to enumerate.

The only mine regularly worked at the time of my visit was that of Santa Rita, belonging to the German Company. They were driving a level upon the vein, which they had just cut, and were only waiting for the completion of the Hacienda de los Tōltmānĕs, situated in a ravine below the mine, in order to reduce seventy cargas of rich ore, which had already been extracted.

This Hacienda was formerly an old convent: it is built upon the banks of a river, in a deep Barranca, about two leagues from Zimăpān. The situation is beautiful, the command of water great; and there is attached to it a garden and patio, containing some of the finest orange, Ăguăcātĕ, and fig-trees, that I almost ever saw. The climate, from the peculiarity of the situation, is warm.

The repairs necessary at this Hacienda constitute almost the only expence incurred by the Germans at Zimăpān.

The mine of Santa Rita cost them nothing, and

they were induced to select it from finding that it would begin almost immediately to pay its own expences.

Their director, Mr. Spangenberg, who superintends likewise the neighbouring districts of San José del Oro, and el Cărdŏnāl, is a clever active man, and seemed to entertain great hopes of success in the works placed under his inspection.

The Real del Monte Company has no silver mines at Zĭmăpān; they are forced, however, to keep up an establishment there, in order to superintend the works at the lead mine of Lomo del Toro, (the Bull's Side,) so called, probably from the shape of the mountain upon which it is situated. It is about four leagues from Zimapan, and very difficult of access. From the top of a high mountain, a zig-zag path, very narrow, and bordering on one side upon a precipice of from two to three thousand feet, conducts you to the mouth of the Mine. The descent is so steep, that a great part of it is cut into steps; it is, however, possible to go down on horseback, as far as the entrance to the Mine, but from thence to the river below, (about 1,700 feet,) no animal was ever known to descend.

The ore of Lomo del Toro is used as a flux in smelting, and twenty thousand cargas of it were annually consumed in the smelting establishment at Regla. The produce of the mine is divided into four distinct classes, Pepena, Quajado, Aremillos,

and Metales Comunes. *Pepena* is lead ore, which glitters, containing from eight to ten ounces of silver per carga. *Quajado* is *dull* lead ore, but as rich as the Pepena. *Arenillos*, earth sifted, and containing some particles of lead and silver, about one ounce to the carga. *Metales Comunes*, earth, or refuse from the mine, without any metallic particles, but used in smelting. Even this sells at Zimapan for one dollar the mule load. The Pepena is worth fifteen and a half dollars per carga, or five reals per arroba. The costs of extraction, however, leave the Company at present but little profit. The mine has been worked from time immemorial, by Buscones, who search for ore wherever they please, and deliver it at the mouth of the shaft at a certain price. Owing to this total want of system, the mountain has been excavated to an enormous extent, and the lower workings are now so distant, and so difficult of access, that the price paid for each arroba brought up by the Buscones, is two reals and a half, or one half the market price of the ore; in addition to which the Company defray all the expences of mining tools, candles, and powder, and keep an English miner to superintend the works. It is now very difficult to apply a remedy to this evil, as the side of the mountain is so very precipitous, that to effect a communication with the lower workings, by driving a level some hundred feet below the present entrance to the mine, would be useless, unless the ores could be raised to the summit by a small steam-engine,

of about twenty-horse power; and to this the dearth of fuel in the immediate vicinity of Zimapan would present a serious obstacle. It is a pity that a mine of such importance should have been destroyed by being worked in so desultory a manner; but as there was neither method nor restraint amongst the Buscones, you find, at a very little distance from the surface, proofs of their having consulted nothing but the interest of the moment; as the workings consist of huge excavations, unsupported, and in many places already in ruins; while the galleries by which they are connected, are so narrow that it is often nearly impossible to force a passage through them.

There is one other mine, similar to that of Lomo del Toro, at Zimăpān, but of an inferior quality. The Germans have a third, at El Cărdŏnāl, from which they are supplied with a flux for their smelting establishment at Chico.

The Mines belonging to the Anglo-Mexican Company at Zimăpān, having been subsequently given up, it is only necessary to state that, under the injudicious superintendence of a Cornish miner, the buildings erected by the Company were situated upon the edge of a mountain torrent, and were swept away by the impetuosity of its waters at the commencement of the first rainy season; an event, the probability of which the natives had in vain pointed out.

None of the mines were drained while they re-

mained in the hands of the Company; and, when the effects of the panic of 1825 began to be felt in Mexico, Mr. Williamson determined to abandon them, and to confine himself to more important undertakings in the vicinity of Guanajuato.

On the morning of the 27th of July, we left Zimapan to visit the four Mines of the Encinacion, situated about twelve leagues to the North-east of the town, upon the summit of one of the highest peaks of the Eastern branch of the Sierra Madre, or Great Cordillera of the Andes.

Public attention has only recently been directed towards these Mines, which were unknown before the Revolution. General Wavell was, I believe, one of the first to feel their importance, and the Mines now in the possession of the New Mexican Company were all denounced by him. Since that time, both the German and English Companies have acquired possessions there, for which (as I have already stated) no other formality is required than to open a shaft, which is "denounced," and to keep four men employed upon it for eight days. This gives a legal title to a Pertinencia of two hundred varas in the vicinity of the shaft.

The Real Del Monte Company has now the shafts of Las Animas, San Cosme, San Antonio, and El Carmen, which, together, give them a right to eight hundred varas of ground.

The Germans are in possession of Santa Matilda, and nine other shafts, which will give them a com-

mand of more iron, than the largest establishment that it is possible for them to form can require.

The Anglo-Mexican Company had likewise denounced several shafts, but will probably give them up with the rest of the establishment at Zimapan.

The mountain upon which these Mines are situated, appears to be one mass of Iron ore, so rich as to contain 75, and even 85 per cent. of pure Iron, apparently of a very fine quality, and possessing great magnetic powers.

The rock is principally marble and kalkspath, being (as I am informed), similar, in almost every respect, to the famous Swedish Iron mines at Danemora. The Mexican ore is, however, so rich, that a flux will be required in order to smelt it, and some difficulty is apprehended upon that account. The German Company has sent to Silesia for fifty men acquainted with Iron works, and they intend to establish a foundery near the Encarnacion, upon a very large scale. It is impossible to select a spot more favourable, in most respects, for such an undertaking. There is an abundant supply of water, and the vegetation, with which the whole Cordillera is covered, is superior to any thing that I have yet seen in the New World. There is an amazing variety of forest trees. We observed ten different species of Oak, with Ocotes, and Oyamels, (Pines, excellent for fuel,) and magnifient Limes, covering an extent of country as far as the eye could reach. Provisions were scarce, but a Mining establishment,

if successful, always creates a population around it; and, from the facility of irrigation, there is no doubt that the valleys between the mountains might be cultivated with success. The roads are very bad, and so steep, and liable to be affected by the rains, that it would hardly be possible to render the mines very accessible; but still there is no doubt that, in a country where the demand for iron is so great, and where the Mining Districts of Guanajuato and Real del Monte are so near, the speculation might answer.

The English Companies will not commence their works at the Encarnacion, until their other Mines begin to pay. The depth to which the Iron-ore, so rich at the surface, extends, has not yet been ascertained; and although I am not aware of there being any reason to question the abundance of the supply at Zimăpān, I have heard of another district near San Luis Pŏtŏsī, that presented similar appearances, although, on sinking a shaft, every vestige of iron was lost at a few yards below the surface.

From the Encarnacion, we proceeded, on the 18th of July, to the Gold mine of San José del Oro, which was formerly immensely productive, but which has been, for many years, abandoned, and in ruins.

It has been taken, with the neighbouring Mine of "Chalma," by the Germans, as a speculation, which, from its vicinity both to Zimapan and to the Iron mines, will require no additional superintendence; while, should they be fortunate enough to strike

upon the vein, it is certain to repay them for the very trifling advances which they intend to make upon this experiment.

The ore of San José is composed of feldspath and copper, intermixed with gold, which is found pure, in very minute particles, and is separated from the copper in a few hours by the use of quicksilver in the arrastres. The copper ore is then prepared by fire, when it becomes valuable as *magistral;* an ingredient, of which, in the amalgamation of silver, a great consumption is made. It is worth from eight to twelve dollars the carga.

From San José we returned the same evening to Zimapan, which we left on the following morning for Itzmiquilpan, where a road branches off to Chico and Real del Monte.

It was my intention not to have quitted Zimapan without visiting the Mines of El Dŏctōr, Măcŏnī, and San Crĭstŏvăl, which have been taken up by the Catorce and Anglo-Mexican Companies; but I was prevented by the uncertainty of being able to recross the river Tula, which is seldom fordable during the rainy season. Had a fall of rain taken place in the mountains during my absence, I should have been prevented from reaching Zimapan again, and must have given up my visit to Real del Monte and Chico, in order to return to the Capital by San Juan del Rio and Tula, at which place alone there is a bridge. At any other time I should certainly have undertaken the journey, for the district of El Dŏctōr is

one of great importance; and the road from Zĭmăpān although dangerous and full of precipices, is described as the boldest and most picturesque portion of the Sierra Madre, south of Durango.

From Mexico to the Doctor, there are two routes, the one by San Juan del Rio and Căděrēită, and the other a bridle-road, which is laid down in my map of routes, as given to me by one of the agents of the Catorce Company.

The mountainous district commences on crossing the river Tūlă, a little to the South of Tĕpĕtĭtlān, (fourteen leagues from Hŭehŭetōcă,) from whence a succession of steep and barren ridges extends to the Indian village of Tĕcŏsōutlă, situated in a valley, well watered, and abounding in fruitful gardens. From Tĕcŏsoūtlă the road crosses the river Pātĕ, in the vicinity of which there are mineral springs, emitting a dense sulphureous vapour; and from thence it runs to the foot of a bleak and lofty mountain called Sŏmbrĕrētĕ, upon which the Rancho of Olveira stands. The Rancho is nine leagues from Tĕcŏsoūtlă, and four from El Dŏctōr, which it is however impossible to reach in a single day.

The first of the four last leagues traverses a barren and rocky plain; the second winds up a mountain of porphyry and marble, so steep as to be almost inaccessible; and the third lies through a valley, covered with Oak, Ash, the White Birch, and the Pine, with plots of rich soil at intervals. Of the fourth, the first half is the ascent of the mountain

called El Pĭnāl, the summit of which is elevated above the highest peaks of the surrounding Cordillera; immediately beneath it, on a natural platform, stands the village of El Dŏctōr, apparently not two hundred yards from the summit of the Pĭnāl, but in fact nearly half a league distant, as the descent is effected by a zig-zag path, a great part of which is supported by terraces of masonry; whilst beyond the village, and many hundred yards beneath it, there are a number of lesser mountains, mostly conical, and covered with timber, the valleys between them being inhabited by Indians, and sown with maize.

The Mina Grande of El Dŏctōr extends almost beneath the village, and has two "Pertinencias" on the line of the vein, which runs nearly East and West, with an inclination of about sixty degrees: it varies from one to three varas in breath, and yielded, when worked regularly, three hundred cargas of ore weekly. The buildings connected with the mine have been destroyed during the Revolution, and the village itself has gone to decay. It still contains, however, a large church, with ten or twelve good-sized houses, and a few Indian huts.

The mouth of the mine is 4,875 feet above the level of the river Tula, which, at the foot of the mountain of the Doctor is itself 4,519 feet above that of the Gulf of Mexico: the village stands therefore at an elevation of 9,394 feet; and the Ĕspŏlōn, or summit of the mountain above it, attains

the height of 11,019 feet. The socabon, or adit of the Mine, (commenced in 1780, and concluded in 1794, at an expence of 90,000 dollars,) lies 753 feet below the village. It is 966 varas in length, but, from some miscalculation in the measurements, it did not enter the Mine below the lowest levels, and is consequently of little use at present.

The creation of a populous village in such a spot as that upon which the Pueblo of the Dŏctōr stands, is a proof of the influence which the Mines, when successful, always exercise upon the population. The whole surrounding country is now settled, and should the vein, upon examination, be found sufficiently accessible to induce the Catorce Company to continue its operations there, a few months will ensure them an abundant supply of all the necessaries of life. The district contains a number of metalliferous lodes, by which the Indians, not employed in agriculture, have gained a subsistence during the last twenty years; and although none of them have been explored to any extent, they present sufficient indications of richness to render a more minute examination of them expedient. The Haciendas formerly belonging to the mine are situated at Măcŏnī, (four leagues to the South-west,) where there is water in abundance; and at three leagues North of the Dŏctōr, are the mines of San Crĭstōväl, which abound in lead ores, and furnish large quantities of liga, or flux, for smelting. Two leagues and a half

beyond these, again, in a deep ravine, is the quicksilver mine of San Ŏnŏfrĕ, with a vein about nine feet wide, composed of Cinabar, and other mercurial oxydes. The ores differ from those of Almădĕn and Huancavĕlicā, inasmuch as they contain much native mercury, which is seldom found in sufficient quantities to be of much value. It exudes, however, in large drops from the ores which I possess, and the mine has been worked for some time by the present proprietor, with profit.

On the 20th of July we reached the town of Ăctōpăn, about ten leagues from Itzmiquilpan. The first part of the road is stony and barren, but after passing the village of Yōlŏ, (five leagues from Itzmiquilpăn,) the valley of Ăctōpăn commences, and on each side of it there are some fine Haciendas, following in their position the line of the mountains, from which they are supplied with water. The country is inhabited by Ŏtŏmī Indians; and in the vicinity of Ăctōpăn is covered with rich crops of maize and barley.

From Ăctōpăn to Chīcŏ the road is wild and bad, but particularly the last six leagues, two of which lead, by an almost precipitous path, down the side of a very bold mountain, to a little eminence at the foot of it, upon which the town of Chico stands.

The whole distance does not exceed twelve leagues.

The great German Mine of Ărēvălŏ stands upon another little hill, nearly opposite the town.

It enjoyed no sort of celebrity until the beginning of this century, when it fell into the hands of the present proprietor, Don Antonio Revilla, who, after working it for some time in an obscure way, was fortunate enough, in 1803, to fall in with a Bonanza, or mass of rich ore, which enabled him to carry on his operations upon a larger scale. In 1811, from one part of the level, called "El Divino Pastor," he obtained, in seven weeks, a clear profit of 200,000 Dollars.

During the Revolution, Revilla suffered, as all other Mining proprietors did, and was forced to mortgage the large estates in the neighbourhood of Arroyo Sarco, which he had purchased during the time of his prosperity. Having no means of paying off this mortgage, or of recommencing his mining operations and repairing his Haciendas, he was glad to accept the proposals made to him by the German Company, which undertook to advance him 100,000 Dollars, and to take his stock at a valuation, on condition that he should make over to them the entire management of the mine, and twelve Barras, or a Half-Proprietorship in it, for thirty years. The 100,000 Dollars advanced to Revilla in the first instance are to be deducted from his share of the profits, as is half the value of the stock on hand, which amounted to nearly as much more.

Upon these terms the Germans obtained possession of the mine, and there can be little doubt that it will prove a most lucrative speculation; for the

vein is, in many places, from *fourteen* to *seventeen varas* in breadth. The mine contains little or no water, and what there is, is carried off by a Socabon, or Adit, which enters it at the depth of 113 varas. The lowest workings do not exceed 168 varas, and that only at one particular point.

I had the advantage of visiting every part of the mine with the proprietors, who passed nearly three hours with us underground, and I certainly never saw so enormous a mass of metal. Of course, the quality varies, but although there are richer and poorer ores, there are none so poor as not to be worked with profit.

The most valuable ore, called Pepena, has been found, when smelted, to yield five Marcs to the Arroba, or 162 ounces to the Quintal; but this is rarely met with. The ordinary ores, which I saw amalgamated, produced seven and a quarter ounces to the Carga of three quintals, (equal to seven dollars and two reals;) and the expences of the process amounted to four dollars and four reals, leaving a profit upon each Carga of very nearly three dollars. Baron Humboldt's theory as to the saving which may be effected by the introduction of the Freiberg process of amalgamation into Mexico, has not yet been verified. The Germans merely shorten the process by placing the amalgam in stoves for twenty-four hours, which is regarded as equivalent to a week's exposure in the Patio. When the Hacienda is completed, it is their intention to carry flues under

the whole floor, by which means a small *Torta* may be amalgamated perfectly in four or five days, instead of employing as many weeks to effect it, as is the case at present.

It being absolutely impossible to avoid the use of Mexican mining terms, in an account of the mines of that country, it may be advisable to give here a concise explanation of their signification. The *Torta* contains fifteen *Montones* of ore, which has already undergone the process of dressing and stamping; and each *Monton* contains ten *Cargas* (or loads) of twelve *Arrobas* (25lbs.) or three quintals each.

To extract the silver contained in this mass, seven hundred pounds of quicksilver are required, of which from seventy-five to one hundred pounds are lost. To this are added eleven *Cargas* of Rock Salt, or four and a-half of Sea Salt, and from three to three and a-half Cargas of *Magistral*, (red copper ore roasted,) which is worth at Chico from eleven to sixteen dollars the Carga, being brought from Zacualpan, Angangeo, or San José del Oro, a distance of full thirty leagues.

All these ingredients are entirely lost in the process: the expense of which varies, in the different Mining districts, in proportion to the greater or less facility with which they are obtained.

The German Directors at Chico, Messrs. Du Berg and Kloppenberg, informed me that they found that no general rule or theory would apply to amal-

gamation in Mexico; and that they could give, as yet, no explanation of the peculiarities of the process. Long practice had given the old Mexican amalgamators a perfect knowledge of the quantity of the different ingredients required by their ores, and they added to the Tortas, Salt, Magistral, and sometimes Lime, with a precision which a scientific man would be glad to attain, although unable to assign any reason for what they did. The only improvements which the Germans have been able hitherto to introduce, consist in preparing the ores, by the Concentrating Machine,* either for smelting or amalgamation; and in collecting more carefully the quicksilver which may remain in the Tortas after the Amalgamation has taken place. The residue of the Torta is then washed, and carried afterwards, in troughs, constructed for the purpose, round the whole Hacienda, until it is deposited in an open yard, where, after the earthy particles have been again separated by water, that which remains is called *Polvillos*, and on being smelted, is often found to produce from two to three Marcs of silver to the hundred weight. The little quicksilver which may remain is lost in this last operation.

* The concentrating machine (Stossheerd) is an inclined plane or frame work, upon which a quantity of pulverised ore is deposited, and subjected to the action of a small stream of water, which, by the peculiar motion of the machine, is allowed to carry off the earthy particles, and thus to *concentrate* the silver contained in a given quantity of ore, from one to ten or twenty Marcs in the Arroba.

The Germans have another Mine, between Actopan and Chico, called Santa Rosa, which, although the works are in a very dilapidated state, is free from water, (a circumstance to which they have always paid great attention,) and is producing ore even richer than that of Arevalo.

In their Hacienda they can command a water power to almost any extent; their smelting furnaces are completed; the country about them abounds in wood, and provisions are not particularly dear.

To set against these advantages, there is the smallness of their capital, which prevents them from acquiring a proper influence over the natives, and obliges them to introduce their improvements with the utmost caution; and the difficulty of obtaining workmen, except on the unreasonable terms which Revilla was compelled to grant during the Revolution, when one *Third* of the Pepena, or rich smelting ore, raised by each barretero, (common miner,) was allotted to him to be sold upon his own account. But these are drawbacks which time and perseverance will enable the Company to surmount; and they have displayed throughout such a thorough knowledge of the business which they have undertaken, so much assiduity, and such extraordinary economy, that I entertain not the slightest doubt as to their success.

Some of the English Companies have Mines in the vicinity of Chico, from which, however, but little is to be expected. At Căpūlă, the United

Company is working the Mines of Las Papas, Santa Ana, and Santi Christi, the last of which, it is thought, may prove productive. In general, the Mines both of Capula and Chico (with the exception of Arevalo) are poor; and although, where one good mine has been discovered, others may be found, there are so many districts in which the chances of success are greater, that the investments made by the New Mexican, United Mexican, and Anglo-Mexican Companies, in the inferior Mines of Chico and Real del Monte, appear to me to belong to that class of injudicious experiments into which Foreign Adventurers were betrayed, in the beginning of 1825, by the absurd competition for contracts which the mining mania in England created.

On the morning of the 23rd July, we left Chico, and proceeded to Real del Monte. The distance is not above three leagues and a-half, but the road is one continued ascent, and, in many parts, so very rugged, that it requires as many hours to perform the journey.

There is, perhaps, no British Company to which so little justice has been done by the Mexicans as that of Real del Monte; a circumstance which is to be attributed entirely to a misconception of the system pursued there. Many people imagined that Captain Vetch, the Director, having it in his power to make the Mines pay at once, had not done so, in order to allow time for the completion of surface works; which, though highly advantageous at

a more advanced stage of the negotiation, were not essential in the first instance. Indeed, I had myself heard this statement so often repeated, that I could not but conceive that there must be some foundation for what so many agreed in affirming. Upon this point my visit to Real del Monte completely undeceived me, by enabling me to convince myself that the delay which had occurred, was owing entirely to the immense scale upon which the undertaking was carried on; and to the impossibility of effecting the drainage of any of the principal mines, before the arrival of the steam-engines, the departure of which from England had been unfortunately retarded.

A reference to the account of the operations of the Company contained in the Second Section of the preceding Book, will sufficiently prove the use which had been made of the interval.

By pursuing steadily one well combined plan, Captain Vetch had brought all the principal works upon Count Regla's grant, including the old Adit, which may be regarded as the key to the whole, into a fit state for the application of the powers of steam; a task which it required the labour of two whole years to complete. On the Santa Brigida vein, the shafts of San Jose and El Sacramento, and on the Biscaina vein, those of San Juan, San Francisca, Guadalupe, Santa Teresa, San Cayetano, Dolores, and El Zapatero, had been repaired and retimbered down to the Adit level, (about 213 varas,)

in addition to which two new shafts had been sunk, (St. George and St. Patrick,) about fifty varas each, in order to render accessible the workings of some old shafts, upon a very rich portion of the vein, (between La Palma and San Ramon,) which it was found impossible to open anew.

One shaft on the Acosta vein, had been likewise re-timbered down to the Adit level. The shaft of San Estevan had been completely cleared, and was beginning to produce very rich ores.

The mine of Mŏrān had been likewise cleared down to the water, (about eighty feet,) and a horizontal steam-engine erected there, which was to begin working on the 12th of August. It is of fifty-horse power, when worked only to a pressure of 45lbs. on the square inch, but it is calculated to bear a pressure of 200lbs.

With regard to its being fully adequate to clear the mine of water, no doubts are entertained. The deepest workings of the Moran mine do not exceed one hundred and sixty varas; and a few weeks would, consequently, suffice to drain it entirely, were it not for the necessity of re-timbering the whole shaft, as the workmen proceed. There is one curious circumstance with regard to this mine; it has always borne a very high character, and yet, like San José del Oro, no accurate information can now be obtained with regard to the state or extent of its works. About thirty years ago an attempt was made to drain it by some German engineers

brought over for the purpose, who constructed a high-pressure engine planned by Don Andres del Rio. In order to obtain a sufficient command of water, a Presa, or dam, was built, at a great expence, upon the summit of a neighbouring mountain; but the plan failed, because the force of the water having been calculated during the rainy season, it was found insufficient, during the dry, to keep the engine at work for more than six hours out of the twenty-four.

Moran may be regarded as one of the most interesting points at Real del Monte. The old Adit, from which the wealth of the first Conde de Regla was derived, commences within one hundred yards of the shaft. The new Adit, the level for which is taken at the Hacienda of Sanchez, (about eight hundred yards distance,) is to be driven exactly in the same direction, and the new road to Regla passes close to the mouth of the mine.

This road is one of the enterprizes for which the Company has been blamed, and yet, without it, not a single steam-engine could have reached Real del Monte. In the time of the old Count Regla, when six hundred mules were employed daily in conveying ore from the mines to the Hacienda of Regla, which is nearly six leagues from the Real, there was no other mode of communication than a very dangerous path across the mountains. This has now been transformed into a road for wheel-carriages, which is beautifully laid down, and upon

which timber, of a size never transported before in Mexico, is brought to the mines in the waggons that were originally sent out for the conveyance of the steam-engines from the coast. Another road, equally good, and equally necessary, leads to the farms of Gŭajălōtĕ and Zīmbŏ, from the last of which the largest timber is principally supplied.

When, in addition to the works already enumerated, it is recollected that seven steam-engines have been transported from Veracruz to Real del Monte, the aggregate weight of which amounted to fifteen hundred tons;—that one of these (that of Moran) was already on the point of beginning to work, and that two others (those of Guădălūpĕ and Dŏlōrĕs) were in a state of great forwardness, it is impossible not to confess that the greatest praise is due to those, by whose exertions so much had been effected in the short space of two years.

Disappointed speculators may complain of the want of speedier returns; but their murmurs must be ascribed, as I have already stated, to their ignorance, in the first instance, of the nature of the enterprise in which they engaged. They know neither the hardships which have been endured, nor the difficulties which have been overcome, in their service; many of which, it is my firm conviction that it would have been impossible to surmount, but for the science and energy displayed by Captain Vetch, and Captain Colquhoun, to whom, most fortunately for the Company, the direction of this ardu-

ous enterprize was entrusted. The German Directors, two of whom accompanied me from Chico to Real del Monte, were astonished at the size of the boilers, and other pieces of machinery, which had been brought up from the coast, and confessed that they should neither have regarded the attempt as practicable, nor would have undertaken it themselves on any terms.

I was happy to find that these gentlemen, to whose opinion as miners, from what they have done themselves, I should be inclined to attach great weight, were highly gratified with all that they saw at Real del Monte, and expressed, in the warmest manner, their approbation of the system pursued there.

They were particularly struck with the plans for the new Adit, which is, indeed, a stupendous undertaking. It is to commence 800 yards below the mouth of the old Adit at Moran, and must consequently be driven 3,607 yards before it enters the Biscaina vein at the Dolores shaft. In this space it will cut a number of small veins between Sanchez, Moran, and the Santa Brigida lode, the course of which it will then follow, at 140 varas below the level of the old Adit.

As the quality of the ores was not found to be at all deteriorated in the deepest workings of the old Count Regla, who was only prevented from carrying them farther by the difficulty of keeping down the water, there is every reason to hope that, from the

time that the new Adit reaches the Santa Brigida vein, it will not only cover its own expences, but will become a most lucrative speculation. Indeed, were it not for this expectation, no Company could undertake a work, upon such a scale, in such unfavourable ground, as part of the Adit must be driven through the porphyry rock, where the expence of each vara will amount to twenty-five dollars.

It is in consideration of this circumstance that the prosecution of this enterprise has been suspended, until the mines themselves furnish the means of carrying it on, without increasing the outlay of the Adventurers, which already amounts to the whole of the capital originally subscribed. Many are of opinion, however, that had the resources of the Company been devoted to this undertaking, in the first instance, the result, at the end of the term of twenty-five years, to which their contracts entitle them to look forward, would have been more advantageous than the partial drainage which the steam-engines will more immediately effect.

This is a question which it is now unnecessary to discuss, as the opposite system has been preferred, and is likely to succeed, in which case the Adit of Sănchĕz, or Ŏmĭtlān, may be resorted to when the goodness of the mines is demonstrated to some extent below the deepest levels which the Mexican proprietors were enabled to reach. These now extend from forty to seventy varas below the old Adit, so that the new one would render accessible

from seventy, to one hundred varas, of virgin ground, the value of which, in an extremely rich vein, may be easily appreciated.

The country about Real del Monte abounds in forests. Several of these are included in the Grant to the Company, which likewise comprehends the farms of Guajalote, Zimbo, and Ĭztūlă. At the last of these it is intended to introduce the English system of husbandry, (with English grass seeds, unknown at present in Mexico,) and oats, lucern, turnips, and clover: a project which cannot fail to be highly interesting to the Agriculturists of New Spain.

These farms are situated between Real del Monte and the Hacienda of Regla, which is likewise ceded to the Company. I visited on the 25th of July this stupendous monument of the magnificence of the old Mexican miners, which may be regarded also as the best proof of the value of their mines. It is situated in a deep ravine, or Barranca, about six leagues to the South-east of Real del Monte; it not having been found possible to obtain a sufficient command of water at a less distance.

The Hacienda is composed of a vast pile of buildings constructed apparently without plan, or regularity, but comprising every thing that a mining establishment can require:—immense vaulted storerooms, for the reception of the ores; twenty-four Arrastres, worked by horizontal water-wheels; a number of furnaces for smelting, and two covered Patios, each of about 200 feet in length, in which the

process of amalgamation was carried on. The whole is in a tolerable state of repair, with the exception of the stampers, for braying the ore, which are now in ruins. These are to be replaced by a large water-wheel now constructing by the Company, which is thirty-six feet in diameter, and is to put in motion forty-eight stamps.

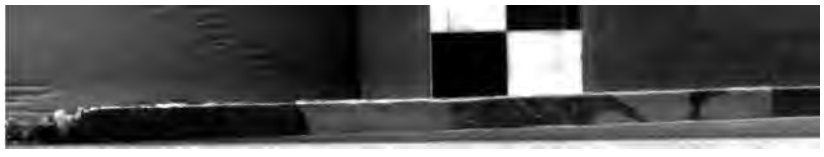
The whole Hacienda is supposed to have cost nearly a million of dollars, and this I am not inclined to regard as an exaggerated estimate. In 1795 five thousand cargas of ore were received there weekly. Yet even this enormous establishment was thought insufficient for the mines, and another Hacienda, called San Antonio, was constructed at a little distance from Regla, which is likewise a splendid mass of buildings, although not comparable to Regla in size or importance. San Antonio will be entirely given up by the Company, as, even if the Mines were to produce again what they did in 1764, a more methodical system of working them would render it impossible for them to make use of it, and Regla, together. Instead of transporting the ores, as was formerly the case, *en masse*, from the Mine to the Hacienda, they will now undergo a previous preparation at Real del Monte, for which purpose a large stamping establishment is erecting there, in a central position, between the Santa Brigida and Biscaina veins.

By the use of the concentrating machine, the poorer ores, when dressed, will be worked up from

two and three Marcs, to thirty and forty Marcs per carga; and will only be sent to Regla when in a fit state to be either smelted, or amalgamated with the greatest advantage.

In addition to this stamping establishment, the Company has at Real del Monte, in the buildings attached to the Dolores shaft, a patent turning-lathe, and an apparatus for sawing, both of which are worked by a small steam-engine of twenty-horse power. They have a foundery likewise, with smiths, carpenters, coopers, fire-brick-makers, rope-makers, and men versed in every trade that can be required in order to render the establishment complete within itself; and although some difficulty has been since experienced in keeping up a proper degree of discipline amongst so numerous a train of dependants, nothing could exceed the activity, and good order, which prevailed in all the different branches at the time of my visit.

The Anglo-Mexican Company was in possession of some very inferior mines at Real del Monte, the contracts for which were taken up in England by the Directors in 1825. As they have all been since abandoned, it is unnecessary for me to say any thing respecting them, except that there was only one, (the mine of the Reunion,) of which the native miners entertained a favourable opinion. The rest were regarded as speculations, in which the Company had become involved from not making a proper distinction between the mines upon the two great veins



belonging to the Regla family at Real del Monte, and those situated upon inferior veins in the same district. The mine of La Reunion is indebted for its name, and its existence, to a very curious circumstance. In the two last shafts sunk by the old Count Regla at the extremity of his Pertinencias upon the Biscaina vein, (San Juan, and San José,) the real direction of the lode was lost; and nothing but some small veins, or threads of ore, were cut, which did not repay the cost of working.

It became afterwards a favourite theory amongst the Mexicans to suppose that the great lode had split into various ramifications at this point, and *reunited* again at the place where the shaft of *La Reunion* has been sunk. It has, however, been since suspected that the real direction of the Biscaina vein lies a little to the North of San Juan and San José, almost immediately below the great Pachuca road; and should this prove to be the case, the Real del Monte Company will possess a large tract of unexplored ground upon the very richest part of the vein, to which the new shaft of St. Andrew will afford an easy access.

In considering the prospects of the Real del Monte Company, a short history of the mines now in its possession may serve to elucidate the calculations with regard to their future produce, which I have given in the third Section of the preceding Book. This history has been often repeated in England since it was first made known to us by Baron Hum-

boldt, but it has become so much the fashion of late to disbelieve every statement with regard to mines, as emanating from the Stock Exchange, that it may perhaps acquire by confirmation the merit of novelty.

The Biscaina vein had been worked, almost uninterruptedly, from the middle of the sixteenth to the beginning of the eighteenth century, when the two principal mines, (El Xăcāl and La Biscaina,) which, in 1726, had produced 542,700 marcs of silver, (4,341,600 dollars,) were abandoned by their proprietors in consequence of the difficulty of keeping down the water with the very imperfect machinery employed in those early days. The mines were then only one hundred and twenty varas in depth, and the known richness of the ores in the lower levels induced an enterprising individual, Don José Alexandro Bustamante, to denounce them anew, and to attempt the drainage by the Adit of Moran, a part only of which he lived to complete. On his death-bed he bequeathed his hopes, and his works, to Don Pedro Tereros, a small capitalist, who had supplied him with funds to continue his operations, and who, sharing in all Bustamante's anticipations of success, immediately removed to Real del Monte, and devoted his whole remaining fortune to the prosecution of the enterprise. From the smallness of the capital invested, the work advanced but slowly, and was not completed until the year 1762; but in the twelve succeeding years Tereros drew from

his mines a clear profit of 6,000,000 of dollars, or about 1,200,000*l.* sterling. He obtained the title of Count by the munificence of his donations to the Court of Madrid; and never was title more dearly bought; for he presented Charles III. with two ships of the line, (one of 112 guns,) constructed at the Havana, of the most costly materials, entirely at his own expence; and accommodated him besides with a loan of one million of dollars, no part of which has yet been repaid. He likewise built the two great Haciendas of San Antonio and Regla, which cannot, together, have cost less than 1,200,000 dollars, (240,000*l.*); and he purchased landed property to such an extent, that even in the present depressed state of the agricultural interests of Mexico, the revenue of the present Count exceeds one hundred thousand dollars; and ought, in more favourable times, to amount to nearly two. (40,000*l.*)

From the year 1774, the produce of the Regla mines began to decrease, not because there was any change either in the quantity or the quality of the ores, but because the workings having been carried, upon some points, ninety varas below the level of the Moran Adit, the expences of the drainage, which was effected by twenty-eight Malacates, each requiring forty horses in the twenty-four hours, became so considerable as to leave little or no profit to the proprietor. In 1783 the weekly cost of extraction alone exceeded nine thousand dollars, and the works were suspended in conse-

quence. In 1794 they were re-opened, and the Mine continued in activity till 1801; when, although the produce in the seven years had amounted to six millions of dollars, the undertaking was given up, as not affording sufficient profit to compensate the risk.

Since then no attempt has been made to reach the deeper levels, the works, which have been partially carried on, having been confined to portions of the vein, which had been previously neglected. Even these were abandoned during the Revolution, when the amount of silver raised, (as has been shown,) did not exceed 200,000 dollars.

The Company now stands, with regard to Count Regla, exactly in the position in which Bustamante and Don Pedro Tereros, (the ancestor of Count Regla,) stood with regard to the original proprietors of the Biscaina vein. The value of the mines is known, and the abundance of the ores in the lower levels ascertained, but these levels have become inaccessible in consequence of a defective system of drainage; and the application of the powers of steam is now to effect what was attained, in the first instance, by the gallery of Moran. It is immaterial whether the necessity for a change of system occurs at one hundred and twenty, or at two hundred and seventy yards below the surface, provided the powers of the machinery are equal to the increasing difficulty of the task. In 1727, the enterprise was upon a comparatively small

scale, and was accomplished by the persevering efforts of an individual. In 1827, when all the vast works, to which the success of those efforts had given rise, came to be comprehended in the negotiation, it required the capital of a Company to undertake the Herculean task of putting them again into repair. This has been effected at an expence of two millions of dollars.

The money, in as far as my own means of observation have extended, has been laid out in a manner, which does credit both to England, and to the gentlemen who were charged with the direction of the Company's affairs. The only question is, therefore, whether the importance of the enterprise bears a fair proportion to that of the means employed, or, in other words, whether the former produce of the mines was such as to justify the expectations entertained by the Company of a profitable investment; knowing, as they do know, that, upon reaching a given point, they will find an abundance of ores, equal in richness to those which gave to the former proprietors of the Biscaina vein their enormous wealth.

Upon this subject the facts stated in the Fourth Book, and in the present Section, will enable my readers to form their own opinions. Mine are not changed by the delay which has occurred in the realization of Captain Vetch's expectations; and although it is undoubtedly in the power of the proprietors here, by frequent changes in the ma-

nagement, very materially to affect their own prospects of success, I am still inclined to believe that, if the system hitherto pursued be adhered to, the present year, (1828,) will place the result of the enterprise beyond all doubt.

On the 27th of July I returned from Real del Monte to the Capital, where I arrived after an absence of sixteen days. My party had been unusually numerous, Mr. Ball, Dr. Wilson, and Mr. Carrington, having all accompanied me upon this tour, which was not accomplished without a number of little vicissitudes. There was not a single person in Mexico able to give us a correct idea either of the distance, or of the route to Zĭmăpān, and it was in consequence of this want of information that we found ourselves involved, the second day, in the fatiguing journey to Ītzmĭquīlpăn, which the heat and drought together rendered almost insupportable. From the Hacienda de San Pedro to the river below the town, (a distance of twelve leagues,) we did not cross a single stream of water. One of Mr. Ball's horses, (which left Mexico too fat for travelling) sickened and died in consequence; and one of mine, towards the latter part of the day, was affected by the sun in a very extraordinary manner. He became perfectly mad, and rushed with the utmost fury not only upon the persons who approached him, but upon his companions, amongst whom we tried to drive him loose before us. As a last resource we were forced to lasso him with two lassos,

and thus to drag him along between two other horses. Even in this state the utmost caution was requisite; for, in the steeper parts of the road, where the ropes were necessarily relaxed, he endeavoured to throw himself over the precipices, and in more than one instance very nearly succeeded. On reaching Itzmiquilpan, he was bled almost to exhaustion, and finally recovered, although weak and unserviceable for many weeks.

It was nearly nine in the evening when we entered Itzmiquilpan, in consequence of the delay which this accident occasioned; and we must have gone supperless to bed, as all the shops were closed, had we not been provided with a case of preserved meat, which furnished us with an excellent meal. There is no country in which the advantage of provisions in this shape is so frequently experienced as in Mexico. They keep for any length of time without being affected by the heat; and, as the cases are made of solid block-tin, they support the motion of the mule without injuring. When opened, a three-pound case, with an allowance of bread, a few potatoes, if they are to be procured, and charcoal enough to make the canteen kettle boil for a quarter of an hour, furnishes a supper for six or eight people; and the certainty of this is duly appreciated after a ride of fifty miles beneath a vertical sun.

It happened to be the fête of the Patron Saint of the town on the night of our arrival, and nothing

could be more curious than the appearance of the principal street, which was lighted up, in honour of the occasion, with a number of large paper lanterns, covered with the figures of Saints and Angels, most brilliantly coloured, and suspended by ropes at equal distances from each other. They were all waving gently in the wind, and the streets were crowded with people, either seated quietly before their own doors, or flocking in from the neighbouring villages; the whole population of which was attracted by the unusual sight. The temperature of Itzmiquilpan is much milder than that of Mexico, the town being situated 1,205 feet below the level of the Capital. Zĭmăpān, which is 1,680 feet lower than Mexico, from its extremely sheltered position, approaches more to the atmosphere of *Tierra Caliente*. The intervening ridge of mountains is nearly 9,000 feet in height.

From Zĭmăpān to San José del Oro, there is an ascent of 3,477 feet; and from thence to the little Hacienda of the Encarnacion, where we passed the night after visiting the Iron mines, you rise about 1,000 feet more. In the neighbourhood of Zimapan the mountains have been entirely stripped of their timber, with that wasteful and improvident spirit, which characterised the proceedings of the old Mexican miners wherever the Mining laws were not most strictly enforced. Not a tree is now to be found within seven leagues of the town, although, from its situation in the centre of the great chain of

the Sierra Madre, there can be no doubt that the site which it now occupies was formerly part of the vast forest, which commences about four leagues below San José del Oro.

When once you reach this point, nothing can be more magnificent than the scenery; woods follow woods in endless succession, and wherever there is a break in the mountains, the eye wanders over a wilderness of timber of the most luxuriant growth. With the exception of a few huts in the neighbourhood of San José, and the German amalgamation works at the Encarnacion, there is not a vestige of the hand of man throughout the whole district. The village which formerly existed near San José has disappeared, and the clearings, which afforded a subsistence to the miners, are overgrown with brushwood. Great, indeed, will be the transition, in the course a few years, if the Iron mines are brought into activity, and an European establishment formed, with all the din of restless activity, where nature now reigns in solitude and silence.

From the extreme badness of the roads between Zimapan and the Encarnacion, we did not attempt to take up beds or provisions. Mr. Spangenberg undertook to procure us a sheep upon the spot, with abundance of tortillas, and we trusted to cloaks and a buffalo's skin for a bed. The house was extremely small, and the family of the proprietor large, for it consisted of a wife and four daughters, besides two or three sons. The last were disposed

of in the stables, in order to make room for us; but I believe that not less than fourteen persons took up their quarters in the sala, stretched in a double tier upon the floor, with their feet meeting in the centre. Nothing but the extreme coldness of the air at such a height preserved us from suffocation, for the columns of mist which were driven occasionally past the house, rendered it impossible to leave either door or windows open. It was curious to observe the rapidity with which these clouds came sweeping down from the higher ridges, enveloping us suddenly in a cold, chilling vapour, accompanied by a strong current of air, and to feel the contrast between the temperature of the region subject to their influence, and the glowing sky of Zĭmăpān, which opened upon us after about three hours of an almost precipitous descent.

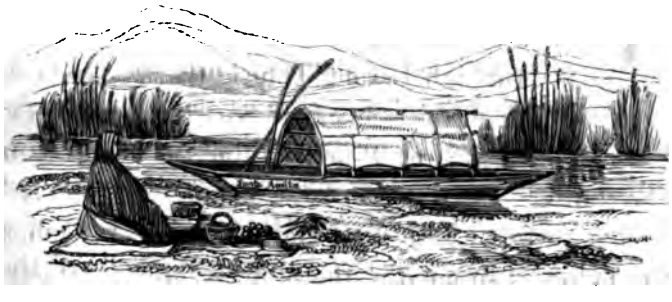
Between Zĭmăpān and Ăctōpăn there is little worthy of remark, with the exception of a dangerous pass which terminates the ascent from the village of Yolo to the Valley of Actopan, the level of which is 320 feet below that of the Capital. At the very summit of the hill which leads to this valley, there is a sheet of smooth and solid rock, which it is impossible to avoid, from the precipitous nature of the road, and which, with shod horses, is almost impassable. We dismounted, and took every precaution in order to assist ours in crossing it; but notwithstanding this, three of them were very seriously injured in the attempt.

On reaching the Table-land beyond this ridge, the singular mountain called Los Organos de Actopan, is immediately in sight, and continues so for several leagues. It rises 2,426 feet above the level of the plain, and resembles the spires of a cathedral, or the twisted growth of a large species of cactus (whence the name is taken) in its appearance. This cactus runs up in columns to a great height, and is much used by the Indians for enclosures. On the road from Real del Monte to Mexico, there is one village, every house in which is so completely fenced in by it, that nothing else is visible. You pass through avenues of cactus, which constitute the streets, and as none of these habitations communicate with the road by a door in front, there is nothing except the barking of the dogs, and the occasional squalling of a child within, to indicate the abode of man.

The neighbourhood of Chĭcŏ is not less remarkable than that of Actōpăn for the singular configuration of the surrounding rocks. I regret much not having obtained a drawing of this wild spot, or of a natural column, which rises suddenly out of the ground in the middle of the forest between Chico and Real del Monte, and towers up at once to the height of near 200 feet. The Barranca of Regla, too, with the beautiful waterfall a little above the Hacienda, and the row of basaltic columns which support the ledge of rock from which the stream descends, is a magnificent subject for the pencil, and one to which no drawing that I have yet seen does

justice. But I was not accompanied upon any of my first journeys by Mrs. Ward, and was consequently unable to ascertain whether her efforts would have been attended with more success.

After our return from the Interior, it was my intention to have visited Real del Monte again; but it was so late in the season before we quitted Mexico, and the vomito was already so prevalent upon the Coast, that we did not think it prudent to allow the beauties of the scenery to tempt us into a delay, the risk of which every day tended to increase.



SECTION VI.

VISIT TO THE MINES OF TEMASCALTEPEC, ANGANGEO, TLALPUJAHUA, AND EL RANCHO DEL ORO.

On the 22nd of August I again left Mexico, and proceeded, through Lerma, Toluca, the Hacienda de la Huerta, and the village of San Miguel, to Tĕmăscāltĕpēc, where I arrived on the evening of the 23rd.

The little town, in the vicinity of which the mines are found, is situated in the State of Mexico, thirty-two leagues to the South-west of the Capital, on the declivity of the Cordillera towards the Pacific, into which some of the rivers, that rise in the neighbourhood of Tĕmăscāltĕpēc, actually flow. The mines of this district enjoyed formerly a great reputation for the richness of their ores; (the finest specimen in the King of Spain's collection was brought from the mine of San José;) but, as the works increased in

depth, the difficulty of draining them augmented so much, that they were gradually abandoned; and, for some time before the Revolution, their produce was very inconsiderable.

By a sort of fatality, Temascaltepec, although it could never rank higher than a sixth-rate district, appears to have possessed peculiar attractions for the foreigners, whom mining speculations have brought to Mexico. The beauty of the climate, and the advantages of the vicinity to the Capital, have probably tended more to influence their choice, than the character of the mines themselves, which, I fear, will be found to present very uncertain prospects. But whatever be the cause, in 1826 five Companies were established there, two English, two American, and one German: not a single mine was worked by a Mexican, although Mr. Seption, (of the Tribunal of Mineria,) is the proprietor of one, San Francisco de Paula, for which he is still seeking an Aviador.

The two English Companies, are the United Mexican, and that formed by Mr. Bullock.

The United Mexican Company possesses three mines, Los Santos Reyes de la Sierra, La Magdalena, and La Guitarra.

They have likewise two Haciendas de beneficio, Guădălūpĕ and San José. Of the mines, the Magdalena alone was producing ore at the period of my visit. It is situated to the East of the town, upon a hill, the lower part and centre of which is occupied by the mines of the North American Companies;

the shaft was undergoing considerable repairs, and when they were completed, the quantity of ore was expected to increase; but I should not think it likely to do so in a ratio sufficient to cover the expence of keeping up an establishment, with haciendas, horses, and a responsible officer, for the sake of working this mine alone. The two others have been subsequently abandoned.

The Company likewise possessed two Mines at the Real del Cristo, about twelve leagues South of Tĕmăscāltĕpēc, (San Diego and San Antonio,) and was about to contract for another, La Golondrina. All these are known to produce rich ore; but the veins are small, and the system of multiplying and subdividing establishments in a country where personal inspection is so necessary, can hardly be made to answer. The Cristo is too far from Temascaltepec for the ores raised there to be reduced in the Haciendas of Guadalupe or San José; and a new Hacienda must consequently be built, at an expence which few isolated mines, if small, can support.

About 150,000 dollars have been sunk in these enterprises, from which it is generally thought that very little is to be expected.

Mr. Bullock's Company, which has since been dissolved, was denominated "The Mexican Mine Company," and was formed by Mr. Baring and Sir John Lubbock, in order to work the Mina del Vado, denounced in 1823 by Mr. Bullock, as a Mexican citizen, with all the formalities described in the

account of his Visit to Mexico, which is already before the public. The only circumstances which he has not given to the world, are the data by which he was first induced to direct his attention to this unfortunate speculation. Some there must have been, for Mr. Bullock was a real enthusiast about his mine; but upon this subject I have never been able to obtain any authentic information.

Had the mine been really valuable, there would have been nothing injudicious in the manner in which the gentlemen, to whom Mr. Bullock transferred his rights as proprietor, proposed to work it; but in August 1826, the state of their affairs was very unpromising. Mr. Bullock had been appointed Director of the works of the Company, with a salary of 700*l.* The expence of his journey to Mexico, with his family, fourteen Irish miners, a smelter, a gardener, and every thing necessary for a large establishment, had been defrayed in the most liberal manner, and he had been allowed to build a house in a very beautiful situation, with a Hacienda de beneficio, and a garden *à l'Angloise*, attached to it; but in the mine itself there were not only no vestiges of a vein, but no appearance of its ever having been of any sort of importance.

In order to ascertain its situation, a new shaft was sunk at about ninety yards from the old one, upon much lower ground, at which a very ingenious water-wheel was erected by an American engineer, in order

to drain the upper levels: from this a cross cut was driven in the supposed direction of the vein, which, however, only demonstrated its non-existence, by traversing the whole distance between the two shafts without cutting it. Upon this the enterprise was abandoned; but not until fifteen or twenty thousand pounds had been thrown away upon a mine, from which the natives had all pronounced, at the very outset, that not one ounce of silver would ever be extracted. The loss, fortunately, fell upon persons to whom it was of little consequence; but it is much to be regretted, that in a country where, by the judicious application of the same capital, so much might have been effected, the choice of the managing agent should have been influenced rather by the beauties of the scenery, than by the intrinsic value of the mine which it was intended to work. All Mr. Bullock's preparations seemed to be calculated upon a certainty of success, that not even the command of a whole district can give, although its probability increases in proportion to the number of different points upon which a vein is explored. Where the vein is of known goodness, and the possibility of draining it, by the application of a given mechanical power, ascertained, the interval may be employed usefully, as it has been in most of the great negotiations, in the completion of surface-works; but where the very existence of the vein is questionable, to commence operations by a large

investment in these, is, to say the least, contrary to the practice, which an experience of three centuries has induced the Mexican miners to adopt.

The two North American Companies established at Temascaltepec, are those of Baltimore, and New York.

Of the first, Mr. Keating is director; a gentleman who has studied at Freiberg, and was Professor of Mineralogy in the United States.

The Company possesses the Mines of San José, San Luis, and Santa Brigida, situated, one above the other, at small intervals, upon the slope of the mountain, with six Pertinencias extending laterally from the last. In August 1826, very little had been done at any of these mines; and Mr. Keating was living in a wretched hovel close to San José, where a water-wheel, thirty-four feet in diameter, was constructing by American millwrights, by which the drainage was to be effected. This wheel commenced working about a year after the date of my visit (July 1827); up to which time Mr. Keating had seen no reason to change the opinion that he had originally formed respecting the mines under his inspection, namely, that they would pay an interest of from fifteen to twenty per cent. upon the very small capital invested in them. This opinion was founded upon the returns of produce for several years before the Revolution; and as no expence whatever has been incurred in surface-works, with the exception of a leat, or watercourse, by which the wheel is to

be supplied from a spring at a considerable distance, there is no reason to suppose that these expectations will be disappointed.

The New York Company cannot yet be said to exist, none of its agents having reached Mexico during my residence in that country. Of the four mines, the contracts for which have been assigned to it by Mr. Wilcox, the American Consul General, but little is known, and that little is by no means of a favourable character. The importance of San Juan de las Quebradillas, is inferred from the fact, that, fifty years ago, when the upper levels fell in, one hundred and fifty men were buried in the ruins; and the Mina de Aguas is, in like manner, supposed to be valuable, because 200,000 dollars have been recently expended, by the Tribunal de Mineria, in a fruitless attempt to drain it.

The Germans hold at Temascaltepec, in the Real de Arriba, or upper town, the mines called Del Rincon, which were ceded to them by the same Revilla from whom they purchased the Arevalo mine at Chico.

These mines are ten in number, or rather, there are ten shafts upon the same Vein, drained by one adit, driven at the depth of 120 varas, and upwards of 2,000 varas in length. Their former produce is known to have been considerable,* but the works below the adit are full of water, and the

* Twelve Bars of Silver were raised weekly before the Revolution.

adit itself is inaccessible from the extreme foulness of the air. A new shaft must be sunk in order to create a free circulation, before the possibility of draining the mines, at all, can be ascertained; so that it is probable, that the enterprize, if persevered in, will, for some years, rather increase the outlay, than augment the receipts of the Company.

I was deterred by the little interest which the mines of Temascaltepec possessed, from visiting the neighbouring districts of El Cristo and Sŭltĕpēc, in which some mines have been taken up, both by the Germans, and the United Mexican Company, as a sort of dependency upon those of Temascaltepec. Both places are situated in the *Tierra Caliente;* and at El Cristo, which is a narrow valley, shut in, on all sides, by lofty mountains, the heat is said to equal that of Veracruz.

The mines of Tĕpāntĭtlān, which lie far to the South, in the vicinity of the Rio Bolsas, were at much too great a distance for me to think of reaching them. They are held by the Catorce Company, and are celebrated for having given to the Conde de Contramina his title and fortune. The road to this district lies through the very heart of the Western branch of the Sierra Madre; the climate is unhealthy, and there is a great want of timber in the immediate vicinity of the mines. But these disadvantages are compensated by the extreme richness of the ores, some of which produce five and six marcs of Silver per carga, while the *metales comunes*, (inferior ores,) average one marc and a

half. The principal shafts, upon the two great veins of Guadalupe and Santa Ana, contain little or no water, (from eight to ten varas;) and it is known that the works were only suspended during the Revolution, in consequence of the seizure, by General Guerrero, of ores, to the amount of 500,000 dollars, (which were undergoing the process of reduction in the Hacienda,) in order to pay his troops. A splendid Adit, six hundred and thirty varas in length, and four varas broad, by three high, likewise attests the former importance of the mines; and notwithstanding the drawbacks of climate and distance, and the difficulty of effecting even the most ordinary repairs, there can be little doubt that, if properly conducted, this negotiation may become highly advantageous.

It now only remains for me to add, that the mining terms in use at Temascaltepec differ considerably from those adopted in other districts, and explained in the preceding Section.

In the Haciendas, the quantity of ores submitted to the process of amalgamation, is estimated by *Tareas*. The Tarea consists of one hundred Quintals, or five Montones, of twenty Quintals each. This is inconvenient, both because the terms differ from those more generally in use, and because the *Tarea* does not contain an exact number of *Cargas;* as is the case with the *Tortas* and *Montones* in other districts.*

* Torta, fifteen Montones of ten Cargas, each of three Quintals, or twelve Arrobas—four hundred and fifty Quintals in all.

With regard to the process of amalgamation, there seems to be no general rule. The mines vary, not only in the quantity of quicksilver which their ores require, but in the time necessary for the process, and in the loss of quicksilver during the course of it. For instance, the ores of Santa Ana, (a small mine worked by the Administrador of the United Company,) can be reduced by amalgamation in ten days; but with a loss of twenty-five per cent. of quicksilver.

The ores of San Bernabé require sixty days.

Those of La Guitarra and La Magdalena vary from twenty to twenty-eight days, with a loss of only eight per cent. of quicksilver.

The costs of the process may be estimated in the following manner :—

The Tarea requires 30lbs. Quicksilver.

Magistral, thirty Quartillos. (Six to the Arroba.)

Salt from Ăhăhuīstlăn, fifteen Arrobas, or ordinary Salt, twenty-two Arrobas.

The Mexican amalgamators explain this difference by their favourite terms of Minerales frios, (cold or sluggish Minerals,) and Minerales calientes, (hot ores, easily acted upon,) and they attempt no more scientific solution of the changes which occur. Nor is it probable that any will be given until, by analyzing all the different ores of Mexico, some general principles are established, upon which a theory may hereafter be founded, and improvements successively introduced. I mention these

facts merely, in order to demonstrate the necessity of subjecting to the test of experience, upon a large scale, those secrets for expediting the process of amalgamation, which have been offered to the Companies as invaluable discoveries, in London, but by which I am not aware that any beneficial effect has yet been produced in New Spain. Where so great a difference exists between the ores of two mines belonging to the same district, and situated sometimes upon the same vein, there is little reason to suppose that any general system can be adopted. At all events it should be tried by the inventor upon the spot; for an experiment made with chymical nicety upon a very small quantity of ore, may not prove successful when applied to the masses, upon which the Amalgamator must act in Mexico, where it is in the abundance, and not in the quality of the ores, that the riches of the mines consist.

Road to Angangeo.

From Temascaltepec I proceeded on the morning of the 26th of August to Ăngăngēŏ, a Mining district in the State of Valladolid, about seven leagues from Tlālpŭjāhŭa, and twenty-seven from Tĕmăscāltĕpēc.

The road is excessively varied from the circumstance of its bordering constantly upon *Tierra Caliente*, into which almost every deep ravine or valley conducts you. In these you find sugar-plantations, Bananas, Chirimoyas, and all the tropical fruits;

while the sides of the adjacent hills are covered with a fine growth of Northern forest-trees. The luxuriancy of the vegetation surpasses even that which I remarked between Zĭmăpān and the Encarnacion, and the variety is certainly greater.

Yet this magnificent tract of country is, with the exception of a few farms and villages, uninhabited, from the total want of a market for the produce.

From the Hacienda of Hoconusco, where I slept on the night of the 26th, and which is fourteen leagues from Temascaltepec, and forty-six from Mexico, wheat, which might be raised to almost any extent, must be sent to the Capital in order to be disposed of. The revival of the Mines at Temascaltepec can alone give any importance to the agriculture of this part of the country, and this may account for the eagerness with which their progress is watched by the inhabitants.

From Hoconusco the road passes through Zĭtācŭarŏ, which was formerly a flourishing town, but was destroyed entirely by the King's troops, under General Cāllējă, during the Revolution; having acquired a fatal distinction by being selected as the residence of the first Independent Junta. It is now nearly in ruins, and will probably never recover its former importance.

Angangeo is about eight leagues from Zitacuaro. The greatest part of the road consists of a steep ascent. I never saw a town that presented more thoroughly the appearance of a Mining district than

Angangeo. For upwards of a league, the ravine which leads to the town is full of Arrastres, (mills for grinding ore,) worked by horizontal water-wheels, and little Patios, (open sheds,) wretchedly constructed, it is true, in which the process of amalgamation is carried on.

The German Company is the only Foreign establishment in the Real; but there are several Mexicans who work mines in a small way, with capitals, (if they may be called so,) of from five hundred to two or three thousand dollars each, with which, by constant personal inspection, they manage to earn a sufficiency to support themselves and their families.

Angangeo contains four principal veins, running nearly parallel to each other, and separated by valleys or ravines, in one of which the town is situated. The direction of the veins is from North to South. Two only of the four have names,—the Veta del Carmen, and the Veta Descubridora, (so called from the principal mines upon each,) which vary in breadth from two to five, and even nine varas.

On these veins there is a multitude of mines, worked, as I have already observed, by small Mexican proprietors, who contrive to earn by them a scanty subsistence.

Few exceed one hundred, or one hundred and twenty varas in depth, the oldest mine in the place not having been worked above sixty years.

The German Company has three mines, Nuestra Señora del Carmen, (on the vein of that name,) San Antenogenes, (on another vein, which is from six to twenty varas wide,) and La Purisima, in a valley above the town, to the North.

The Mine of El Carmen was the only one, from which ores were raised, at the time of my visit. These averaged from six to ten marcs per monton, and, as they were found in great abundance, the produce would have covered all the expences, had not an establishment of two hundred and fifty horses been required for the drainage.

A water-wheel has been since substituted for the malacates, in which these animals were employed, and it is probable that, at the present day, the Company derives a considerable profit from this undertaking.

Two small Haciendas were attached to the German establishment; one, La Trinidad, with six arrastres, and the other, San Juan Nepomuceno, with stamping machine of ten stampers.

The Raya, or weekly payments, did not exceed 1,000 dollars; and was nearly covered by the produce, one hundred marcs, (equal to eight hundred dollars.)

Angangeo was said to have been in a much more flourishing state two years before my visit: forty-six Arrastres, or mills, and four Morteros (stampers) were then at work, which had been reduced to twelve by the increasing difficulty of obtaining ores. These

were found, at first, in abundance, in the upper levels of the old mines, abandoned during the Revolution. But when it became necessary to work the deeper levels, few had capital enough to enable them to keep down the water, although with very moderate resources it might be easily effected.

Angangeo may, however, be considered, as a rising district, and one in which with very little risk a great deal might be done. The largest mines there would not require a capital of above thirty or forty thousand dollars; and the metallic riches of the surrounding mountains have been so little explored, that they may be regarded as quite a new field. Labour is cheap; water abundant, and with a fall sufficient for any kind of machinery;—wood, and provisions, are plentiful, and the climate good, though cold.

There are some local peculiarities, however, to counterbalance these advantages. In the first place, the ores are seldom found in a pure state, but contain, on the contrary, a most extraordinary mixture of metals, which vary with the different veins.

In the Veta del Carmen, the silver ores contain a large proportion of arsenic, with which the whole mass is so impregnated, that, when brayed in the arrastres, it is of a dull greyish blue, or slate colour, by which the montones of ore from this vein are easily distinguishable, while undergoing the process of amalgamation.

These ores are reduced in less time than any

others, seldom requiring more than eight days for the completion of the process.

The vein of the Descubridora, as well as that upon which the German Mine of San Atenogenes is situated, contain a large proportion of bleierze, or silver mixed with lead. In all, there is a considerable mixture of zinc (*blende, estoraque*), and native antimony (*spiesglaserz*), which are very troublesome, as they must be separated by the *pepenadores* (ore-dressers), before the ores are stamped, both being unfavourable to the action of the quicksilver. Besides these, there is much acaporosa (carbonate of iron).

In order to get rid of a part of these extraneous substances, it becomes necessary to roast the ores after they are dressed; the process lasts about three days, and is continued until fourteen cargas of ore are reduced to ten. The expence is from five to six dollars per monton.

The ores called Colorados may be reckoned also amongst the peculiarities of Angangeo. They are generally found in the levels nearest the surface, and are, in fact, metals in a state of decomposition, strongly impregnated with a reddish oxyd of iron. They are usually rich, containing as much as sixteen, eighteen, and even twenty marcs of silver in the monton (of thirty hundred weight). When amalgamated, they require more time, and more quicksilver, than the other ores of this district, but no magistral. In

all the Mines it is observed that the silver mixed with arsenic is found only in the deepest workings.

Iron pyrites (*schwefelkies*) abound in the higher levels, and it is to them that the red colour of the ores extracted from these levels is to be attributed: they are prepared by fire for the arrastres, when the sulphur evaporates, and leaves a red oxyd of iron; which distinguishes these montones, as the blue colour does those in which arsenic predominates.

The Colorados, as I have already observed, only occur at a certain distance from the surface.

In a new mine, worked by the Cura of Angangeo (San Severiano), the transition from the Colorados to the ordinary metals, occurs within a space of twenty varas from the mouth of the shaft; and from the moment that this line is passed, magistral becomes necessary for the amalgamation of the ores, although a little higher it is not required.

The following is a fair estimate of the expences of extraction and amalgamation at Angangeo, per monton, of ten cargas, (each of three quintals):—

Extraction.

	Dollars.	Reals.
Ten Barreteros . . .	5	0
Peones	1	0
Powder and Candles . .	1	2
Tools, &c.	1	0
	8	2

Amalgamation.

	Dollars.	Reals.
Hacienda	3	4
Repasadores	2	4
Azoguero	1	0
Salt	2	0
Magistral	0	4
Quicksilver lost . . .	5	0
Separation of Quicksilver from Amalgam	0	4
	15	0

In all, twenty-three dollars and two reals; while the value of the ores contained in the Monton, taking them at an average of six marcs, (some are much richer, and few, or none, poorer,) is forty-eight dollars; which leaves a clear profit of twenty-four dollars and six reals upon each monton.

There are few districts in which the use of Arrastres, in lieu of stampers, is so general as at Angangeo.

They are more economical in some respects than Morteros, (stampers,) as they require much less attendance; but they also do less work: for an arrastre cannot bray more than three montones of ore in the week; while a twelve stamp Mortero will pulverize the same quantity in twenty-four hours. They have, however, the advantage of reducing the ore at once to a fine impalpable power, free from all gritty substances, and perfectly ready to be sub-

mitted to the action of the quicksilver; a state to which it is seldom brought by passing once, or even twice, under the Mortero. But then their powers are limited, and would prove of no avail with the hard ores of some districts, where quartz or porphyry predominates, and for which the powerful blow of the mortero is absolutely required.

With regard to the former produce of Angangeo, I found it impossible to procure any exact information, the records being lost, and the mine owners having long been in the habit of remitting their silver, in the first instance, to Tlalpujahua, from which place many of them were furnished, before the Revolution, with the means of continuing their works. It is, however, generally thought that a Company with a small capital might do well there, and the favourable prospects of the Germans seem likely to confirm this supposition.

The road from Ăngăngēŏ to Tlālpŭjāhŭa traverses one steep and rugged mountain, with an ascent of nearly two leagues, through a forest of magnificent pines. From the summit to the Hacienda of San Rafael, the descent is gradual, but constant, and the distance about four leagues. I had not the pleasure of seeing this establishment completed, the labours of Messrs. Moro and Enrico having been a little retarded by the rainy season; but the progress which had been made since my first visit was surprising, and, on my arrival at Tlalpujahua, where I again passed some days, I found, both in the town and in

its vicinity, abundant cause to admire the diligence which had been displayed. A number of additional mines had been brought into activity, in order to explore the veins upon the greatest possible number of points at once; and on the lode of Las Virgenes, an entirely new shaft, called the mine of Arevalo, from its proprietor, the Cura, had been sunk, the ores of which appeared to be very promising. In the town, improvements were proceeding with equal rapidity, and the market was thronged with well-dressed natives; many of whom, a few months before, had no other attire than a Queretaro blanket of the commonest kind.

From Tlalpujahua I returned to the capital, by the Rancho del Oro, which is situated just within the confines of the State of Mexico. The United Mexican Company s in possession of nineteen Mines there, the former produce of which is known to have been very considerable. Nine of these Mines are situated upon the Veta Descubridora,* and may be considered as one work; five other shafts are sunk upon the lodes of San Rafael and San Acasio.

The state of the whole, at the period of my visit, afforded a striking exemplification of the evils with

* This name is common to all the Mining Districts, and means merely the vein, or lode, to the discovery of which the establishment of the Real is due. Thus the Coronas Vein was the "Descubridora" of Tlalpujahua; the Milagros Vein of Catorce; and the Vein of San Bernabé, of Zacatecas.

which the absence of the master's eye must always be attended. Under the injudicious management of a Mexican Administrador, (steward,) 130,000 dollars had been spent in two years, without the drainage of any one of the shafts having been effected, although none of them exceeded 155 varas in depth. A visit from Mr. Alaman, the principal Director of the Company, had led to the dismissal of this unprofitable servant, and an Englishman, Mr. Walkinshaw, was associated with a Mexican miner of some reputation, in the management. But time was requisite in order to do away with the effects of the slothful and dilatory system which had been fostered by their predecessor; and the same men, who, at Tlalpujahua, under the eye of Mr. Rivafinoli, worked with an energy which could not easily be surpassed, seemed to lose all their activity on entering the district of El Oro, and performed their several duties with a sluggishness which it was painful to witness.

In August, 1826, the mine of El Rosario was the only shaft from which ore was raised. The vein appeared to be rich, but small. The gold is found in particles, imperceptible to the naked eye, in a matrix of quartz, which contains sulphuret of silver, disseminated throughout the mass in such narrow stripes, that unless the dimensions of the vein increase, they will hardly repay the expences of working.

Gold mines in Mexico generally diminish in value.

as they increase in depth, and it is to be apprehended that the district of El Oro will not form an exception to this rule. The mines, however, were worked to advantage as late as 1810, and it is upon record that, in 1805, a single Carga of Ore was sold at the mouth of the shaft for eleven thousand dollars. A very few montones of ore, of a quality much inferior to this, would repay the Company for all its advances; although these are likely to be increased by the construction of a Hacienda, which is indispensable, if the enterprise of working the mines is persevered in; every building connected with them having been destroyed in 1811, in order to furnish palisades for Rayon's camp upon the Cerro del Gallo.

The plans for this Hacienda were not completed when I was at El Oro; but I have been since informed, that it is to be situated in the valley of Tĕpĕtōngŏ, where a Presa, or dam, has been constructed, during the last year, of sufficient size to form a reservoir of water in the rainy season, for the supply of the machinery during the dry months. This Presa is built across a ravine, and is seventeen varas in thickness at the foundation, terminating, at the height of sixty feet, in a wall three varas thick, and 200 feet in length, from side to side. The whole is solid masonry; so that the cost, in addition to the other expences connected with the construction of a Hacienda, must be very considerable.

I took my former road, on my return to Mexico,

through Ĭstlăhūācă and Lerma; the rainy season being too far advanced to render it advisable to explore any new path across the mountains. By setting out very early in the morning we had succeeded, during the whole expedition, in avoiding the rains; although they rendered many parts of the road nearly impassable, particularly in the neighbourhood of Temascaltepec, where there is a great deal of red clay, upon which neither horse nor mule could preserve its footing. With the exception of a few falls, however, on our way to the least accessible of the mines, and the misfortunes of a Carga mule, that was nearly drowned in crossing a torrent, we met with no adventures; and the freshness of the country around us made ample amends for the additional difficulties with which our progress was attended, in consequence of the rains.

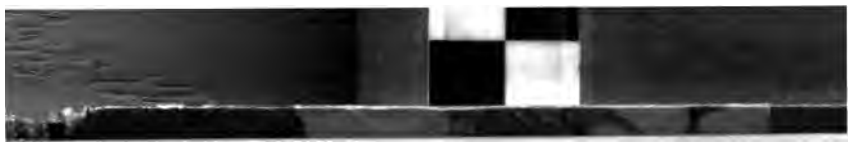
I never saw, in any part of the world, a greater variety of beautiful scenery than is to be met with between Tĕmăscāltĕpēc and Zĭtācŭarŏ, but particularly in the vicinity of the Valle de Temascaltepec, where the road winds repeatedly up and down a Cañada, of just sufficient depth to produce, in alternate layers, the vegetation of every different climate.

I likewise recollect with pleasure the Barranca of Hŏcŏnūscŏ, which, on one side, led us, by a slope of nearly a league, to the foot of a precipitous ridge of rocks, to climb which, with our tired animals, seemed almost impracticable. Upon the summit

there is a sort of Table-land, upon which the Hacienda stands; and from this another long and sweeping descent leads to Zitacuaro, through a succession of woods, with occasional openings, so natural, and yet so varied, that you can hardly conceive them not to have been made to ornament some stupendous park. At Zitacuaro, where we arrived on a market-day, we found provisions of all kinds in the greatest abundance, and made a most delicious breakfast, on new milk, the finest wheaten bread, and eggs, with oranges, pines, and sugar-cane, all the produce of the surrounding district. From thence to Ăngăngēŏ, the country assumes a more rugged character, and pine-forests, similar to those about Tlālpŭjāhŭa and El Oro, mark the transition from the *Tierra Templada* below, to the less genial atmosphere of the higher regions.

I arrived in Mexico on the 5th of September, and immediately commenced my preparations for my great journey into the Interior, which did not, however, take place until the beginning of November; all my plans having been deranged by the illness of my eldest little girl, who was very nearly killed by a *coup de soleil*, which brought on a brain fever, and left us, at one time, very little hope of her surviving. To the skill and unremitting attentions of Doctor Wilson we were indebted for her recovery, but she was long in too weak a state to bear the fatigue of travelling; and as Mrs. Ward had resolved

upon accompanying me, and could not reconcile herself to the idea of leaving her children for two whole months, our departure was put off from day to day, in order to allow time for our little invalid to gather strength.



MEXICO IN 1827.

BOOK THE SIXTH.

BOOK VI.

SECTION I.

COMMENCEMENT OF JOURNEY TO THE INTERIOR.—STATE OF QUERETARO.—ZELAYA, THE BAXIO, GUANAJUATO; MINES OF THE TWO COMPANIES ESTABLISHED THERE. — REVENUES AND RESOURCES OF THE STATE.

On the morning of the 3d of November, 1826, having taken leave of all our Mexican friends, most of whom predicted that we should not extend our journey North beyond Guanajuato, we bade adieu to San Cosme, and proceeded by the great *Tierra Adentro* road to Huéhŭetōcă, where we slept. It was long since the inn there had opened its gates to such a cavalcade as ours; but, bad as the accommodations were, we determined always to stop at the Ventas, in lieu of private houses, except in places where we intended to pass some days, on account of

the inconvenience with which the reception of so numerous a party must have been attended anywhere else. The inns mostly contain four or five small rooms opening into the Patio; but in the Haciendas, where the accommodations consist of one large sala, which is the only spare room, it is impossible to attempt a subdivision of apartments; and although we had provided for desperate cases, by carrying with us a large canvass curtain, so contrived as to be easily suspended across a room, and thus, in fact, to make it two, still the number of females rendered it desirable to have recourse to this expedient as seldom as possible.

Mrs. Ward was accompanied by two Mexican maids, who, with the children, occupied a large coach, drawn by eight mules, which I purchased for the purpose, of a gentleman recently arrived from Durango. As we shut up house altogether in the Capital, our whole Mexican establishment attended us, although with some changes of character, in order the better to suit them to our purposes upon the road. For instance, one of the footmen acted as postilion, and, with the coachman, took entire charge of the coach; while a lad who had been employed for some time in the kitchen in Mexico, appeared in the double capacity of muledriver, and cook; in the first of which occupations he displayed such activity, and flew about so rapidly in pursuit of the scattered animals entrusted to his charge, that he soon acquired from his fellow

servants the name of El Cŏhētĕ, (the Rocket,) by which he was ever afterwards distinguished.

In addition to these, we had three other servants for house work upon the road; two Arrieros, with the baggage-mules, and two stable-men to take charge of the horses; and although the number may appear large, yet such were the complicated wants of the party, the various beds to put up, and unmake, and the difficulty in obtaining provisions, that it was all that our united efforts could accomplish to get into marching order at seven o'clock in the morning, before which time we seldom found it possible to set out. One man was generally sent in advance to secure rooms, and to act as purveyor: this duty devolved upon a fine athletic fellow called Hilario, who had served as an artilleryman during the war of Independence, and who retained enough of his old military habits to make a most invaluable *avant-courier*. Mounted on an excellent horse, he scoured the country in every direction, and if milk, meat, or vegetables, were to be found, we always had them for our evening meal. The first was of the greatest importance to us, as both the children were too young to live upon anything else; the eldest being only a year and a half old, and the second, whom her mother was still suckling, hardly five months. As to ourselves, a large box of preserved meats, and our guns, ensured us against starvation; nor did a day pass, I believe, without our having hares, quail, or water-fowl of some kind, to add

to the mutton cutlets, and broth, which the principal towns afforded us.

The party consisted of Mrs. Ward, Mr. Martin, the French Consul General in Mexico, with whom I had been long on terms of intimacy, and whose agreeable society it was delightful to secure, Dr. Wilson, Mr. Carrington, and myself. We were afterwards joined by the messenger to the Mission, Don Rafael Beraza, and formed, with our servants, a squadron of sixteen men, well mounted and armed, with eight baggage-mules, and as many loose horses, which composed the advanced-guard, driven by the Cohete and the muleteers. The great Mexican coach followed, of which, when loaded for the road, the annexed drawing will give a tolerable idea.

The servants rode next, with their sabres, guns, and Lassos, all dressed in the leather Rānchērŏ costume; which, in addition to its convenience in other respects, had the recommendation of being the cheapest pos-

sible travelling-dress ;* and we ourselves brought up the rear, to pick up stragglers, and to keep the party together. In very bad ground, the order of march was reversed, and we took the lead ourselves, in order to examine the Barrancas, (ravines,) and to ascertain the spot where the carriage could cross with least damage. In this too Hilario was of the greatest use, for he had the eye of a hawk, and having been accustomed to travel with artillery, he had some idea of the powers of wood and iron, and knew that there were some things which it was absolutely impossible for them to bear. His countrymen in general drive over, or through every thing, and look excessively surprised when an unfortunate wheel gives way, (as it usually does,) with a crash, after surviving trials which it would make an English coachmaker's hair stand on end to look at. I could not imagine, at first, to what the toughness of Mexican wheels was due, for they are clumsily put together, and the iron part is composed of separate pieces, instead of forming one compact circle. But then the whole is so bound up with strips of raw hide, which contract in the sun, that it will rather bend than break, and can hardly fall to pieces under any circumstances. It sometimes indeed assumes rather an oval than a circular form, but this fault corrects itself: the projecting parts are

* I paid ten or twelve dollars each for these leather dresses: a cloth coat, or jacket alone would have cost twenty.

worn down by the rough and rocky roads; and as to any little additional motion during the process, it so seldom falls to the lot of a Mexican traveller to glide over the country with the sort of even movement to which Mr. Mac Adam's labours have accustomed people in England, that a few jolts more or less are really not perceptible.

After this description, my readers will not be surprised to hear that none of our party ever entered the coach as long as they were able to sit a horse; and that Mrs. Ward, far from finding it a relief, endeavoured, from the first, to extend her daily rides until she was enabled to perform nearly the whole distance on horseback: which she so far accomplished that she must, I think, have ridden fourteen hundred miles out of the two thousand, to which the aggregate of our journey may have amounted. Between a passo horse and a carriage, on such roads, it is impossible to hesitate, except when the sun is so powerful as to render the protection of a roof desirable, and this, in the winter months, on the Table-land, is not often the case. The dust, which is at times exceedingly distressing when riding, cannot be avoided: it had the effect of making us extend our line of march considerably; and, on a windy day, there was often a space of nearly half a mile between the head and rear of the column: the necessity for this increased as our live-stock augmented, which it did prodigiously upon the road; for when we got into the breeding countries, where

horses and mules were cheap, we made new purchases in order to relieve our tired animals, and entered Mexico on our return with fifty-six beasts of different kinds. We often amused ourselves with fancying the sensation which the appearance of our caravan would have excited in Hyde Park, or Longchamps; where the wild horses and mules, and the servants driving them at a gallop with the lassos whirling round their heads,—the guns, and pistols, canteens, and camp-beds, carga-mules, and coach, in size like a Noah's ark, perambulating, by some accident, the land, instead of the waters, with festoons of Tasajo, (dried strips of beef sold by the yard,) and handkerchiefs full of onions and tortillas attached to different parts of it by the servants,—would have formed a curious contrast to the neat chariot and four, with patent lamps and liveried attendants, in which the preparations for a journey in Europe usually consist. Nor would the night-scenes have appeared less singular, with the packsaddles and horse-accoutrements arranged in rows under the corridor; the arms of the servants suspended near them; the horses picketed around, and the muleteers stretched on the ground by the side of a large fire, cooking their mess for the night in a common kettle, or preparing their beds under the coach, which served as a general place of rendezvous. Chăpītă, the Indian nurse, used to superintend the culinary operations of this group; and often have I seen her, before daylight, bending over the fire,

and concocting a kettle of Atolli, or Champorada,* with the child slung to her back in the Indian fashion, and exposed to the bracing cold of the morning air, which is not dispelled until the sun gets well above the horizon, at nine or ten o'clock. The little creature seemed to thrive upon this system, and as all was confusion within at that hour, the servants being busy in making up the loads, and her mother occupied with the care of her less healthy sister, we generally let her take her chance.

At nine or ten o'clock, according to the distance, we stopped at some Rancho to breakfast, or sate down wherever there was shade, and pulque, or a little water, to eat the provisions which we had brought with us. Milk we often obtained at this hour, when we laid in the provision for the day, which kept admirably, notwithstanding the sun and the motion of the coach, in bottles filled till they overflowed, and then corked up. I did not find this to be the case with the milk and cream which I had brought with me from England;† for the cases not being quite full, we generally found, on opening them, that their contents had been converted, by the trot of the mules, into butter; in which state, however, they furnished, occasionally, a very agreeable addition to our fare. After breakfast, which lasted but a short time, we proceeded, without farther in-

* A composition prepared with chocolate, maize, and water.

† It is made up in little tin cases hermetically sealed, and is very useful on a voyage.

terruption, to our resting-place, wherever that might be. The mules and horses were then relieved from their loads, and driven to water, and to bathe, where there was any river near, after which they enjoyed their rest and food during the remainder of the day. At four in the morning, the lassoing and saddling began; for as the beasts were all loose in the patio, or in some immense stable, (where stabling was to be procured,) there was no other mode of securing them. This operation, in which my young companion Carrington, (who became very expert in the use of his lasso,) generally distinguished himself, occupied a couple of hours, after which the cargas were assigned to the different mules, the rest of the luggage affixed to the coach, and the whole party gradually put into motion. We lost a great deal of time during the first two or three days, from the want of a systematic mode of proceeding, the servants being new to their work; but as soon as they learned how to distribute it most conveniently, each took his own line; and, as we all assisted in making up the packages, it was curious to see the rapidity with which the rooms reassumed their desolate appearance after being enlivened for a time with a few symptoms of European civilization. I have seen a bed dismounted, rolled up, and transferred to a mule's back in less than five minutes, so that all our little comforts, in fact, created no material delay. There are few ladies, however, who would have had strength and resolution enough to give so good an example in

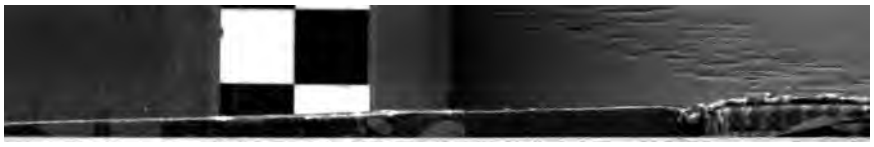
this respect as Mrs. Ward; for it was dreary work getting up, day after day, two hours before sunrise, and sitting for one hour at least in a cold room, wrapped up in a manga or a buffalo-skin, with a poor little sick child to take care of, while all the complicated arrangements of packing and loading were going on. In December we had a hard frost almost every night; and as there was no possibility of getting a fire of any kind within doors, there was little warmth or comfort to be obtained before the sun rose; and though we knew that we should be scorched afterwards, we have often hailed its appearance as a real relief. From the scarcity of rooms, Mrs. Ward, the two children, and the maids, were usually quartered together; Mr. Martin and I slept in another apartment; the rest of the party in a third; while if a fourth could be procured, which was not often the case, it served to hold the canteen and supper apparatus, after which the servants crowded into it for the night, with a saddle and a Sĕrāpĕ* each for a bed. The muleteers and Chance, (the terrier, of whom honourable mention has been already made,) were most luxuriously provided for amongst the packsaddles: the coach was confided to the guardianship of a large bull-dog, with whose ferocious looks the natives were much alarmed; while in the interior of the rooms, a white terrier of my own, who accompanied me in all my travels,

* The Serape is the woollen blanket (of home manufacture) worn by the lower orders as a "manga" for riding.

supplied the place of the fastenings, with which no Mexican door is ever provided. We generally found, when Hilario had been successful in his catering, a large mess of meat stewing down upon our arrival. To this we added the game collected upon the road, which was usually sufficient to furnish not only ourselves, but the servants with an ample meal. At six or seven o'clock we sate down, where seats could be procured or manufactured, to our homely repast, and at eight we were glad to take refuge from the cold in bed.

After this general outline of our proceedings, I shall give an account of our route, with some of our little difficulties and distresses, the nature of which may be more clearly understood by a reference to the Map of Routes annexed to this volume, in which the whole journey is laid down in red, with the mountains and other obstacles by which our progress through some parts of the country was impeded. It contains, likewise, the *States* through which we passed; and although it does not include the towns in those States that we did not actually visit, still it conveys an idea of their relative position and extent, (the boundaries being correctly traced,) and will therefore form a necessary addition to any statistical information that it may be in my power to communicate.

On the 4th of November, we proceeded over ten leagues of desert and barren country to Tula, a small town, in the vicinity of which there is a bridge



over the river Tula, or Moctezuma, and some fine fields of maize. The Church is curious, having been constructed at the time of the Conquest as a military position, with lofty walls, unbroken by windows, and surmounted by little turrets, which give it more the appearance of an old castle, than of a building consecrated to Divine worship. There is another church of a similar appearance at Jălāpă, and Mr. Martin thought that they both resembled some of the old churches built by the order of the Templars, in France.

Nov. 5.—We reached Ărrōyŏ Sārcŏ after travelling ten hours over a road covered with lava, and rocks of volcanic origin: parts of it were so bad as to make the progress of the coach exceedingly slow, and we did not reach the Meson till after dusk in the evening. We found it so very small and bad, that we were compelled to seek a night's lodging in a neighbouring Hacienda belonging to Revilla, the proprietor of the German mines at Chico. His steward received us with much civility, and made over to us the two only disposable rooms. One of them was nearly full of maize, but Mr. Martin and I found a vacant spot to erect our beds, while our companions spread their mattresses upon the Indian corn, which they assured us, in the morning, formed a most comfortable couch, as it accommodated itself to the shape of the body. The lands belonging to the Hacienda are nine leagues in extent, and are very valuable, from their vicinity to the

Capital. The crops had fallen off considerably in consequence of the destruction of the Presas, (reservoirs of water,) during the Revolution; but the proprietor having been enabled by his contract with the German Company to repair them, it is expected that the returns from the estate will again be very large.

Nov. 6.—The road to Săn Jūan dĕl Rĭŏ is one continued descent from Ărrōyŏ Sārcŏ, for about three leagues, when you reach the Llano del Căzădērŏ, so called from a great hunting-party given there by one of the Viceroys, (Don Antonio de Mĕndōză,) in which hundreds of deer, hares, and rabbits were killed. Our coachmen descended the hill, as Mexicans always do, at full gallop, and drove on at the same pace across the plain, until they were stopped by discovering that one of the fore-wheels had been on fire so long that the whole nave was gone, and the wheel itself rendered utterly useless. We were five leagues from Arrōyŏ Sārcŏ when this happened, and seven leagues from Săn Jūan: the sun was excessively powerful, and there was neither Hacienda nor Rancho within a reasonable distance at which we could hope either to deposit the children, or to get our damages repaired. We were, therefore forced to leave them with the coach in the middle of the plain, and to ride on to Săn Jūan, from whence we despatched a mule with a new wheel, which we succeeded with some difficulty in procuring. We reached the town, where we for-

tunately found an excellent Venta, about four o'clock, and waited with great anxiety for the appearance of the coach, which was expected to arrive before ten. Midnight came, but nothing was heard of it; and at three in the morning Mrs. Ward became so uneasy for want of her child, which was still at the breast, that I resolved to go myself in search of it on horseback. I accordingly set off with one servant, well armed, (for our host had been alarming us with stories of robbers,) and after a gallop of twenty miles I found our unfortunate coach just where we had left it on the preceding morning. The wheel sent from San Juan did not fit the axle, and they had been forced to carry the old wheel to a Hacienda about five leagues off, where there was a carpenter's shop, in order to get it repaired. As there was little hope that this would be speedily effected, I took the youngest child from its nurse, and making a sort of scarf with a Tapalo, or long Indian shawl that she lent me, I deposited in it my little charge, and having secured it still farther with a silk sash, I put my horse into a gentle canter, and took once more the road to the town. The child was a good deal astonished at first with the novelty of its situation, but the motion put it to sleep, and, with an occasional squall or two, we reached Săn Juan in perfect safety about nine o'clock, after a ride rather longer than it often falls to the lot of a little creature of five months old to undertake. The carriage did not come in till two in the afternoon, the poor mules being quite

exhausted after passing thirty hours without food or water. The servants fortunately had provisions with them, and procured some milk from a man who was conveying an ass-load of it to a neighbouring Rancho.

We did not leave San Juan till the morning of the 8th. The vicinity of the town abounds in gardens and fruit-trees, which gave a cheerful air to the scene when viewed from the top of a steep descent on the Mexico side, called La Bājādă de Săn Jūan: it consists of about two leagues of abominable road, covered with loose rocks and stones, and sufficiently dangerous, even on horseback, to make me feel uneasy when coming down it in the morning with the child in my arms. After crossing a river, which runs to the North of the town, (from whence the name, *Del Rio*,) although not laid down in any map, we breakfasted at the Hacienda de Saūs, three and a half leagues from San Juan, where all the abundance of the Baxio seemed to commence. We found, in a poor little Rancho, provisions of all kinds; milk and eggs, excellent bread, tortillas of course, with chile for those who liked it, and large plates of frijoles, a sort of black bean, of which the Mexicans make an extremely palatable dish. In an enclosure opposite the Hacienda I found hares in abundance: they got up two at a time in every direction under my feet, and I might have shot fifty, had I wanted them, with as much ease as I did five.

From Saus the character of the country improved at every step; cultivation increased rapidly: we saw vast plains of maize and little groups of Indian huts at each turn in the road. After passing the Hacienda del Căzădērŏ, a valuable estate belonging to Don Pedro Ăcĕvēdŏ, we crossed a Pĕdrĕgāl, or stony tract, of about two leagues in extent, and afterwards pursued our course through a succession of immense Pŏtrērŏs,* until we came in sight of Quĕrētărŏ, of which there is a beautiful view from an opening between two hills. The first appearance of the aqueduct, by which the town is supplied with water from a spring in the mountains, at a distance of nearly three leagues, is very picturesque. Its arches are lofty, light, and bold, and its vast extent gives it an air of great magnificence as it stretches across the plain.

Quĕrētărŏ is the capital of the State of that name, the territories of which were formerly comprehended in the neighbouring "Intendancies" of Mexĭcŏ, Lă Pūeblă, and Guănăjūatŏ. They are now divided into the six "Părtīdŏs," or districts, of Ămĕālcŏ, Cădĕreītă, Săn Jūān dĕl Rīŏ, Săn Pedrŏ Tŏlĭmān, Qŭerētărŏ, and Xālpăn, which contain in all a population of about 200,000 souls. The Constitution of the State is a copy in miniature of that of the Federation, from which it has taken all

* A Pŏtrērŏ means strictly an enclosure for "Potros" (young horses,) but is applied generally to enclosures for any kind of cattle.

the mechanism of government, and all the religious intolerance. The inhabitants, with the exception of those of the capital, are mostly employed in agriculture. The district of Cădĕreitā, however, contains the mines of El Dŏctōr, Măcŏnī, and San Crĭstōvăl; and the Government entertains so high an opinion of their future importance, that a contract has been concluded with the Anglo-Mexican Company for the establishment of a Mint, on very favourable terms. The State abounds in Haciendas, both of cattle and sheep, (Gănādŏ Măyōr, y Menōr,) and of wheat, (trigo,) maize, (maiz,) and beans, (frĭjōlĕs.) The population of the Capital, by the last census, appears to be 32,000; but the town is supposed to contain at least 40,000 inhabitants. During the Revolution, 90,000 souls were often assembled in it, the proprietors of the neighbouring Haciendas being frequently compelled to take refuge there with their families, and farming servants, while their property was laid waste by the contending parties.

Quĕrētărŏ is divided into five parishes, or Cŭrātŏs, four in the body of the town, and one, (San Sebastian,) in the suburbs, being separated from the rest by a little dirty stream, which is dignified with the title of El Rio, the river. Some of the Churches are fine, particularly that of Guădălūpĕ; as are the Convents of San Frăncīscŏ, and Sāntă Clāră, the last of which contains a population of two hundred and fifty females, composed of seventy nuns

and as many young ladies sent there for their education, with lay-sisters and attendants. It is an immense building, and is said to resemble a little town in the interior, with streets and Plazas regularly laid out; but this we had no opportunity of observing ourselves, as not even Mexicans are allowed to enter the walls.

We were much struck with the busy look of Quĕrētărŏ, which has quite the air of a manufacturing district. More than half the houses contain shops, and the whole population is engaged either in small trades, or in the wool manufactories, which are still very numerous. They are divided into two classes, Obrāgĕs, and Trăpīchĕs. The first comprise all the establishments that can employ from ten to thirty looms; the last, those in which only one or two are in activity. In both, coarse cloths, Tāpălŏs and Māngăs of different patterns and sizes are manufactured, part of which are retailed upon the spot in the great Plaza, where a market is held every evening by torchlight, and part sent to the Capital, or other great towns of the Federation. The demand for these manufactures has decreased very much since the ports were opened to European imports; indeed the woollen trade is now principally kept up by a Government contract for supplying the army with clothing; which has afforded a temporary relief to one part of the population by imposing a general tax upon the remainder. The price paid for scarlet, green, and yellow cloths

of the very coarsest texture, varies from twenty-four reals (twelve shillings) to eighteen reals (nine shillings), and fifteen reals (seven and sixpence) per vara, according to the colour; and there is no doubt that they might be obtained of a better quality at a much lower price from abroad. The wool used is brought principally from *Tierra Adentro* (the Northern States), San Luis Pŏtŏsī, and Zăcătēcăs: its price varies from sixteen to twenty-four reals the Arroba (of twenty-five pounds), including carriage, (about five pence three farthings, or three pence three farthings English money per pound;) but the wool most esteemed is the produce of the State itself (called Lana de Chĭnchōrrŏ). It acquires its value not from any superiority in the breed of the Qŭerētărŏ sheep, but from the circumstance of the flocks being so much smaller than those of the North that they can be better attended to, fed in richer pastures, and kept more clear from Ăbrōjŏs, and other thorns, which deteriorate the fleece. This wool sells for three dollars and a half per Arroba (thirty reals), and is expected to rise in value. In 1824 the wool of San Luis was only worth fourteen reals.

I was promised by the Governor of the State, Don San José Mărīnă, who is himself proprietor of the large Hacienda of Mĭrāndă, a return of the amount of wool consumed in all the Obrages of Queretaro during a period of five years before and after the Revolution; but this document never reached me, and I am consequently unable to state

the extent of the change which the new system has undoubtedly produced. Agriculture, at the period of my visit, was only beginning to recover from the effects of the Civil War: the crop of maize had been lost in consequence of the extreme dryness of the season, and the price had risen from two to five dollars per carga (of 300 lbs.) In abundant years it is seldom worth more than twelve reals per fanega. There were, however, no apprehensions of a scarcity, as 300,000 fanegas were known to be on hand within the territories of the State.

We passed the whole of the 9th of November at Quĕrētărŏ, in order to visit the Governor and some of the principal merchants, for whom we had letters. In the evening we went to the Cāñadă, or great ravine, about two leagues from the town, which, like the Bărrānca of Rēglă, sinks suddenly below the level of the Table-land, and assumes, in the course of a few hundred yards, all the appearances of *Tierra Caliente*. It is inhabited by a race of Indians who have resided there since the Conquest; and abounds in gardens and magnificent trees, with some hot baths, which are said to possess great medicinal virtues.

We left Quĕrētărŏ on the 10th of November, and breakfasted at a Rancho, called El Păsēŏ, about six leagues from the gates. From thence to Zĕlāyă it is four leagues. At a little distance from the town we crossed a magnificent bridge over the river Laxa, which, in the rainy season, forms an impetuous

stream. When we saw it, its waters were very low; it joins the great river of Lerma, or Santiago, near Sălămāncă, in conjunction with which it pursues its course towards the Pacific.

Zĕlāyă, by the census of 1825, contains only 9,571 inhabitants; the streets are drawn, as usual, at right angles, and the houses in the centre of the town are well built; the suburbs are poor and miserable; but the great Plaza, one side of which is occupied by the church of El Carmen, and the other by the convent of San Francisco, is really fine, and does credit to the taste of the architect (a native Mexican) by whom it was designed.

The Băxīŏ, so celebrated in Mexico, both as the seat of the great agricultural riches of the country, and the scene of the most cruel ravages of the Civil War, commences between Qŭerētărŏ, and Zĕlāyă. I saw it under great disadvantages, for the country was parched up by long continued drought, and it is probably owing to this that it was so far from answering my expectations. I had pictured to myself a succession of Haciendas, abundantly supplied with water for irrigation, and consequently smiling with verdure; and I was not a little disappointed at finding that the masses of cultivation, however considerable in their aggregate, were still lost in the immensity of the surrounding space; and that the country wore the same dull livery of dust which gives so monotonous a character to the scenery throughout the Table-land. Between

each Hacienda there was a large tract of ground covered with Mimosas, and abounding in hares, but without any symptoms of the labour of the agriculturist having been ever employed upon it. I was assured, however, that a great part of this land had only been thrown out of cultivation since the Revolution, when the failure of the mines at Guănăjūato deprived the farmers of their market.

11th. From Zĕlăyă to Irăpŭātŏ, the distance is fourteen leagues. We breakfasted at El Rancho de los Hūagĕs, about six leagues from Zĕlāyă, and reached Sălămāncă at three in the afternoon. The town, like most of the smaller towns in the Băxīŏ, is half in ruins, but the situation is pretty, and the ground about it rich. A violent storm came on shortly after we had quitted Salamanca, and converted, in a moment, the fine loam over which we were passing, into a mass of mud, through which we ploughed our way with great difficulty. We did not reach Irăpūātŏ till half-past eight o'clock, although the distance from Salamanca does not exceed five leagues. Our beds had fortunately been kept tolerably dry by their oil-skin covers, but we were glad to take refuge in them immediately, as the Meson afforded no facilities for drying, or even changing our wet clothes, the rooms being entirely lumbered up with the saddles, and other packages which we were forced to shelter there from the rain.

The town of Irăpūātŏ contains, according to the census of 1825, 16,054 inhabitants; by that of

1823, the number appeared to be 21,030. Some of the public buildings are fine, particularly the convent of Nuns, called de la Enseñanza. There are a few cotton-spinners and weavers, but the bulk of the population consists of "Lăbrădōrĕs," (agriculturists,) who reside in the town, and have estates near. Of these there are 971 "Vecinos," (heads of families.)

Salamanca contains 485 "Lăbrădōrĕs," and 1,091 "Artesanos," on a population of 15,053 souls. In the district of Ĭrăpūātŏ there are thirty Haciendas de Campo and sixteen Ranchos; in that of Salamanca, twenty-nine Haciendas and sixty-nine Ranchos; many of which, however, are very small. From Zĕlāyă there are no similar returns.

12th Nov. From Ĭrăpūātŏ to Gŭanăjūātŏ eleven leagues.

We commenced our journey late, having been assured that the distance did not exceed seven leagues. After breakfasting at the Rancho of La Călēră, we reached Būrrăs, a village belonging to the Marquis of Rāyăs, seven leagues from Irapuato, and found, to our great surprise, that we had still four leagues to go. The situation of Būrrăs is extremely picturesque. In the middle of a country almost desert, you come suddenly upon the borders of a Bărrāncă, the whole of which is a mass of verdure. Vegetation follows the course of a small stream that runs down the centre of the ravine, and extends for some distance on either side. The effect

reminded me of some of the drawings in Denham's African travels, where a little spot, with something like water and freshness, is represented in the midst of a scene of desolation.

The country between Bŭrrăs and Guănăjŭato is uninteresting, and of the town itself nothing is seen until you reach the Gate of Mărfil, where you enter the suburb of that name. The houses follow for nearly a league the direction of a Cañada, or ravine, on each side of which there is a long line of Haciendas de Plata, (amalgamation works,) intermixed with houses, varying in height and shape according to the nature of the ground. On one side there is a raised trottoir for foot passengers; but coaches, and animals of all kinds, proceed up the bed of the river, down which, in the rainy season, a torrent occasionally flows with dangerous impetuosity.

Few years pass without some accident occurring; yet no part of the immense mineral wealth that Guanajuato has produced, was ever devoted to the improvement of the present entrance to the town, and you cross the torrent thirty times between the gate and the principal street.

We were met at some distance from Marfil by Mr. Williamson and Mr. Jones, the Directors of the works of the Anglo-Mexican Mining Association, who kindly undertook to lodge our whole party in a house belonging to the Company, where we were happy to find ourselves restored to the luxuries of space and cleanliness, after having been so long re-

duced to the confined and dirty rooms of the Ventas upon the road.

As it is not the object of this work to give a geological description of the Mining Districts, I shall beg to refer my readers to the Baron Humboldt's scientific researches for any information that they desire upon this point; and merely state here a few facts, without a knowledge of which, any account of the operations of the Companies established in Gŭanăjuāto must prove unintelligible.

The Veta Madre, or great Mother Vein of Guanajuato, has produced, since the year 1766, (before which time I have no returns,) 225,935,736 dollars.* It is composed of several parallel veins, running in the direction of N. W. and S. E., and varying in width, where they combine into one mass, from five to eighty varas. The miners distinguish the three principal branches of the Vein by designating them as El Cuerpo Alto, El Medio, and El Baxo; and it is observed, that the points where the three Cuerpos have been found to approach each other most nearly, and to be richest in silver, correspond with the valleys that intersect the direction of the Vein, in which the rich mines of Sĕrēnă, Rāyăs, and Cātă, are situated. The town has been entirely created by the mines, and is very irregularly built; the houses and streets being distributed rather according to the vacancies left by the surrounding

* This is the amount given by Humboldt's Tables of Produce, in conjunction with the returns from 1804 to the present day.

mountains, than by any rules of art. This is particularly the case with the amalgamation works, one of which sometimes occupies a whole ravine, the spaces above, on either side, being crowded with miners' huts. The streets are full of ascents and descents, many of which are so steep as to render the use of four mules in the carriages of the more wealthy inhabitants almost universal. The churches, and some of the houses, are fine, and the Ălhōndĭgă, a large square building used as a public granary, forms a remarkable object, and is visible from every side.

The mines are scattered in different directions round the town; and in the vicinity of some of them, little "Pueblos" have been formed, which may be considered as the suburbs of Guănăjūātŏ. This is the case with Vălĕncĭāna, (where the population formerly amounted to 7,000 souls,) and Rāyăs; and, in a less degree, with Sĕrēnă, and Vīllălpāndŏ. The Haciendas are mostly close to Guănājūātŏ, and though now in ruins, their number and extent attest both the former importance of the mines, and the opulence of the Rescatadores, (amalgamators,) by whom these expensive buildings were raised. Few or none of them possessed a sufficiency of water to work their machinery, for which purpose mules were employed; and fourteen thousand of these animals were in daily use before the Revolution. The Rescatadores purchased their ores at the mouth of the shaft, relying entirely upon their own powers of

estimating by the eye the value of the montones exposed for sale, in such a manner as not to make a disadvantageous bargain. In this science they attained great perfection; for more fortunes were made in Guănājūātŏ by Amalgamation works, than by the miners themselves; while the extent to which the system was carried afforded to the successful adventurer the means of realizing instantly to almost any amount. During the great Bonanza of the Valenciana mine, sales were effected to the amount of eighty thousand dollars in one day; and it is to this facility in obtaining supplies, that the rapid progress of the works in that mine, after its first discovery, may be ascribed. Had it been necessary to erect private amalgamation works, in order to turn his new-born riches to account, many years must have elapsed before the first Count Valenciana could have derived any advantage from his labours; for when fortune began to smile upon them, the man, who was destined in a few years to rank as one of the richest individuals in the world, did not possess a single dollar.

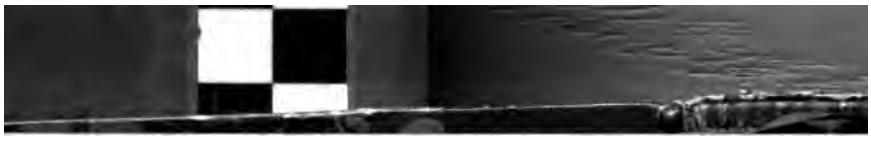
The system of "Rescatadores" still exists at Guănājūātŏ, but upon a very small scale; most of the capitals formerly employed in this way having been lost, or withdrawn, during the Revolution. The sales at the mines, in 1826, seldom exceeded 1,500, or 2,000 dollars in the week. The Foreign Companies wish to unite the profits of the amalgamator with those of the miner, and have consequently

fitted up extensive Haciendas of their own. The Anglo-Mexican Company possesses eight of these Amalgamation works; the United Mexican four; and this new plan, should it be found to answer, will undoubtedly tend to discourage, for some time, the re-establishment of the independent Haciendas.

On the morning of the 13th of November, we visited the mine of Vĭllălpāndŏ, situated in the mountains to the East of Gŭănăjuatŏ, about four leagues from the town, upon a separate vein, totally unconnected with the Veta Madre. A number of small mines are united in the "Negotiation" of Villalpando, but the depth of the deepest levels does not exceed two hundred varas: the ores are rich in gold, and in appearance resemble those of the Rancho del Oro: picked stones have been found to contain as much as two ounces of Silver, to one pound of ore; and the Ley de Oro, or proportion of gold found combined with this Silver sometimes amounts to five hundred and fifty Grains in the marc; the value of which at the Mint is raised, in these cases, from eight and a half to thirty and thirty-five dollars. The principal proprietors of the mine are the Conde Vălēncĭānă, the Countess Rūhl, and the Conde de Pĕrĕz Gālvĕz. The Anglo-Mexican Company, to which it belongs, was in possession of eight *Barras*, or one-third of the mine; but the whole outlay was to be repaid out of the first produce, and a fund of reserve of 150,000 dollars for future contingencies, to be set aside, before any division of

profits could take place. The drainage was conducted by four mălăcātĕs, (three English and one Mexican,) and had been effected, in three months, to within twenty yards of the bottom of the shaft, at an expence of 84,000 dollars. The buildings connected with the mine had been all brought into a state of complete repair, and as the weekly produce already amounted to three hundred Cargas of ore, the prospects of the Adventurers were thought to be highly favourable. The mine was worked principally by Būscōnĕs, (Searchers,) whom the hope of a rich prize, (from the value of the gold in some of the ores,) attracted in great numbers. Each man received in payment one-half of the ores which he had raised; and at the weekly sales it was curious to observe the eagerness with which all strove to attract the attention of the buyers, by putting their best stones in the most advantageous light, and sprinkling them with water, in order to show the metallic particles. The sale is conducted by the "Administrador," or principal Overseer of the mine; and as he moves from heap to heap, the "Rescatadores" make their offer in a whisper, and the name of the highest bidder, with the price paid, is inserted on the list. The ores are immediately taken possession of by the Cārgădōrĕs, (Porters,) by whom each Rēscătădōr is accompanied; and sent down to the Hacienda in the town, where the Buscones receive their money on the following day.

Nothing can be worse than the road to Villal-



pando: from the moment that you quit Guanajuato, all traces of its vicinity are lost, and you traverse ravines as wild as those of Zĭmăpān or Zĭtācŭarŏ, with as little to remind you of the neighbourhood of man. There is not a tree to be seen in the whole four leagues, and many of the ascents are so steep that we were glad to be provided with animals accustomed to face them, instead of trusting to our own. Mrs. Ward was mounted on a magnificent mule, and I was provided with a horse, which Mr. Williamson had the kindness to make over to me afterwards, and which I found at once the most useful and the most dangerous creature that I almost ever possessed. I never saw it tired, but even when ridden with the utmost gentleness, it was difficult to keep it quiet, and if once put out of temper, there was no remedy but giving it up altogether for twenty-four hours.

Tuesday, Nov. 14.—We visited the mine of Sĭrena, in which the Anglo-Mexican Company holds ten Barras in perpetuity, and had acquired four more for twelve years, by an additional advance of 100,000 dollars. The mine had been nearly drained by Mălăcātĕs in six months, and from the levels already above water at the time of my visit, ores were raised in sufficient quantities to cover the expences, and to leave a surplus of from 1,000 to 1,400 dollars weekly. Sirena lies about a league from Gŭanăjuātŏ: the road out, which has been repaired by the Company, is good; and the mine

itself, being situated in one of those hollows in which, as I have already observed, Nature seems to have deposited the great mineral riches of the district, and not having been worked hitherto to any thing like the same extent as the other mines upon the Větă Mādrė, is considered by the natives as one of great promise. The outlay upon it, (including the purchase money of ten Barras,) was, in September 1826, 255,201 dollars.

From Sirena we proceeded to the Hacienda of Păstītă, an amalgamation work entirely fitted up by the Company, with twenty-eight arrastres, and a water-wheel for the stampers, which is expected to work six months in the twelve: 42,860 dollars have been expended upon this Hacienda by the Company, but it is now held at a nominal rent of five hundred dollars per annum, until the whole outlay be repaid, so that they have, in fact, the use of it for eighty years rent free.

The Hacienda of San Agŭstīn, which we next visited, is the property of the Association, and has cost altogether 116,365 dollars. The purchase money was trifling, but a great additional outlay was occasioned by the preparations for the introduction of the Cornish system of washing and reducing ores, —the new smelting establishment, which proved so complete a failure under the superintendence of Mr. Lucas, and the Freiberg revolving-barrels, which it has not yet been found possible to apply to the immense mass of ores that are subjected to the

process of amalgamation in New Spain. Sān Ăgŭstīn was the residence of all the Cornish miners, and for the credit of England it must be hoped that those who sought their fortune in Mexico are not to be regarded as a fair specimen of the population of that part of the British dominions. There were some good and useful men amongst them, who have continued in the service of the Association, and are now amongst its most efficient agents; but the generality of the Cornish have left behind them a character for ignorance, low debauchery, insubordination, and insolence, which has very materially diminished the respect which the Mexicans were inclined to entertain for the supposed superiority in intellectual acquirements of the inhabitants of the Old World. Nothing could exceed the indulgence shown by the authorities of Guănăjūatŏ towards these men, six or seven of whom were often picked up in the streets drunk, and conveyed to the Hacienda of San Agustin by the very watchmen, who, if they had been natives, would have been lodged in jail; but their patience, as well as that of the mine-owners, who were compelled to pay enormous salaries, and to see their work badly done,* was nearly

* It must always be borne in mind, that although the outlay is made in the first instance by the Company, it is carried by them as a debt to the account of the Mine, and it is to be paid out of the first proceeds. It therefore becomes the interest of the owners to see that the work is properly performed; and to refuse to pass accounts whenever unnecessary expences are in-

exhausted, when the Directors in England were fortunately induced to abandon the system, and to employ natives in all the operative parts of their principal undertakings. The management alone is now European, and the persons entrusted with it having shown a proper disposition to conciliate the natives by acquiring their language, and only varying their mode of working in cases where some positive and evident advantage accrued from the change, the Mine-owners and the Company proceed towards the attainment of the common object with a mutual good understanding, and, consequently, with an increased probability of success.

There is a small steam-engine erected at San Ăgŭstīn, which is intended to be used both for sawing timber, and for braying ores: it puts in motion twenty-four stampers of three hundred weight each, and has likewise been applied with very good effect to the Freiberg revolving barrels. It consumes one carga (300lbs.) of wood in the hour, which, at three reals (of eight to the dollar) per carga, makes a total expence of nine dollars in the twenty-four hours. Another engine of fourteen horse power had been applied to the little mine of La Purisima, at Santa Rosa; but as it was not at work during my visit to Guanajuato, I did not think it necessary to ride

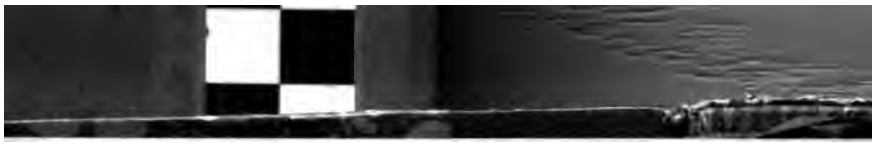
curred by those entrusted with the management. For instance, machinery sent out and not used, or mining works badly executed by foreigners, who are paid for executing them better than the natives, cannot, in reason or justice, be charged against a mine.

three leagues across the mountains in order to see it.

After returning from San Ăgŭstīn, I passed the whole of the afternoon at the Hacienda of Sălgādŏ, in which the ores of the Valenciana Mine are reduced. The Hacienda contains forty-two arrastres, or crushing-mills, and thirty-six stampers, and the works are under the direction of a young Mexican, Don Pedro Bĕlāuzărān, celebrated for his skill as an amalgamator, which he appears to have inherited from his father, who was one of the most distinguished miners and "Rescatadores" of Guanajuato, before the Revolution. Under his tuition I endeavoured to acquire an idea of this complicated process, which I shall proceed to lay before my readers, never having myself found in any work a description calculated to convey all the information which I wished to obtain respecting it.

The ore, on being extracted from the mine, is placed in the hands of "Pĕpĕnădōrĕs," men and women, who break all the larger pieces with hammers, and, after rejecting those in which no metallic particles are contained, divide the rest into three classes, called, in mining language, "Ăzōguĕs," and "Ăpŏlvĭllādŏs," "Buenos" or "Ordinarios." The "Ăzōguĕs" are the inferior ores, in which the matrix contains but a thin sprinkling of silver. As this increases, it becomes "Apolvillado ordinario,"

and "Apolvillado bueno" when very rich. Sulphuret of silver, where it occurs but little intermixed with other substances, is designated as "Polvillos;" (probably because when reduced to "polvo," (dust,) this dust is found to be richly impregnated with silver,) and "Molonques," or "Petanques," are the names given to the masses or crystallizations of pure silver, which are not unfrequently met with. The three last are too rich to be submitted to the ordinary process of amalgamation; but the "Azogues" and "Apolvillados" are transmitted in *costales*, (miner's sack,) weighing 150lbs. each, to the Hacienda, where they are delivered to the Administrador, (overseer,) who gives a receipt for the amount. They are then submitted to the action of the Morteros, (stamps,) one of which of eight stampers, (Mazos,) is capable of reducing to powder ten cargas of ore, (each of 350lbs.) in twenty-four hours. This powder not being thought sufficiently fine for the quicksilver to act upon it with proper effect, it is transferred from the Morteros to the arrastres, (crushing-mills,) in which water is used. Each of these reduces to a fine, impalpable, metalliferous mud, six quintals of powder in twenty-four hours. At Guănăjūatŏ, where water-power cannot be obtained, the arrastres are worked by mules, which are kept constantly in motion at a slow pace, and are changed every six hours. The grinding-stones, as well as the sides and bottom of the mill itself,



are composed of granite, four blocks of which revolve in each arrastre, attached to cross-bars of wood. This part of the operation is thought of great importance, for it is upon the perfection of the *Molienda*, (literally, the grinding,) that the loss of quicksilver is supposed in a great measure to depend. It is performed usually in a covered shed, or "Galera," which, in a large Hacienda like Salgado, from the number of arrastres at work at the same time, is necessarily of considerable extent. From the arrastres the ore is again removed to the *Patio*, (amalgamation court,) where it is disposed in *Tortas*, the size of which varies according to the dimensions of the Patio, or the fancy of the Administrador, (overseer.) The number of Montones, (heaps,) contained in each Torta, is consequently uncertain; but the Monton of Guanajuato consists of nine Cargas, and two arrobas, or thirty-two quintals of ore; each carga containing fourteen arrobas of 25 lbs.

The Monton requires three arrobas of salt, (from Colima,) at one dollar, or nine reals the arroba. This is added to the mass three days before any other ingredient.

One arroba of ordinary Magistral, (from Tĕpĕsălār, near Aguăs Călīentĕs,) or 7lbs. of the very best quality, (Pepena.)

Quicksilver, in the proportion of 3lbs. for every marc of silver that the ores of the Monton are supposed by the amalgamator to contain, and varying,

consequently, according to the quality of the Monton, which is determined by the eye.

In the amalgamation of a large Torta, the same proportions are always observed; and the mass is repeatedly worked up by men and mules, (repasadores,) in order to promote the incorporation of the silver with the mercury, which it requires six weeks in winter, and one month in summer, to effect. When the amalgamator supposes the Torta to have "rendido," i. e. to have yielded all the silver that it contains, it is washed in large vats, (Tinas,) until all the earthy particles are got rid of, when the amalgam, which remains at the bottom of the vat, is strained in leather bags until no more quicksilver can be separated from the silver by pressure. The remainder is cut into wedges, which are conveyed to the Quĕmădērŏ, (burning-house,) and arranged in a circular pile round a copper-plate called the Vaso, with a hole in the centre, and a receptacle for water beneath, care being taken to make the hollow left in the centre of the pile of amalgam correspond exactly with the hole in the Vaso below. The whole is then covered by a large iron bell, called Capella, or Capellina, which is strongly luted down; a wall of mud bricks is raised round it, and the intervening space filled with charcoal. The fire is kept up for twelve hours, in which time the quicksilver is sublimed, and afterwards condensed in the water, where it is subsequently collected. The pure silver (Plata quemada) is then cut again into wedges, or

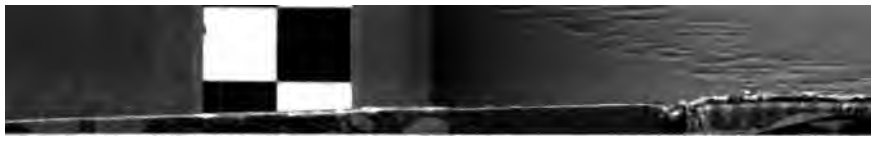
melted down into bars, (containing 135 marcs each,) in either of which shapes it may be transmitted to the mints.

The loss of quicksilver at Salgado in the whole process, in the year 1825, amounted to nine ounces on each marc of silver; but this was thought to be an instance of very successful management on the part of Mr. Bĕlaūzărān, as the proportion is, in other Haciendas, from ten to eleven ounces. He attributed the difference to the excellence of the "Molienda," which he always caused to be continued until there was nothing harsh, or gritty, in the mass upon which the mercury was to act. He added, that the residue of the Torta, when washed, might contain some small portion of silver, but it had not been found that the quantity was sufficient to repay the cost of any farther process, as at Chico; (*Vide* Section IV. of preceding Book,) and it was consequently thrown away.

The best of the "mŏntōnĕs" which I saw at Salgādŏ, were expected to produce fourteen marcs of silver; and those of an inferior quality, eight marcs. Two marcs and a half pay the costs of reduction, which amount to twenty dollars on the mŏntōn. Allowing as much more for raising the ore, and the share in the general expences, there would remain a profit of three marcs, or twenty-five and a half dollars, on each monton of the poor "Azogue" ores; while on the richer "montones" it would amount to seventy-six and a half dollars, in-

cluding the loss of quicksilver, which, in 1826, was worth six reals per pound.

Nov. 15. We devoted the whole of this day to the Valenciana mine, it being impossible to form an idea, in less time, of the extent and importance of this vast undertaking. The history of the Valenciana, like that of the Biscaina Vein, was first made known to us by Humboldt, and is now almost forgotten; it may be advisable therefore to state that the mine is situated to the North of the town of Guănăjūātŏ, upon a part of the Vĕtă Mādrĕ, which, after being slightly worked towards the end of the sixteenth century, had been neglected as unpromising until the year 1760, when Mr. Ŏbrĕgōn, a young Spaniard of very small fortune, resolved to explore the vein upon one of those points where it was believed to be "*emborrascada*," or destitute of mineral riches. For six whole years he continued to work upon this spot, with a perseverance which nothing but a presentiment that he was to make his fortune there can account for; and in 1767, having exhausted his own means, as well as the patience of those from whom he had occasionally obtained supplies, (Avios,) he entered into partnership with a shopkeeper of Rāyăs, called Ŏtērŏ, wielding with his own hands, it is said, the tools of the miner, until the year 1768, when the works having attained the depth of eighty metres, the vein suddenly began to produce enormous masses of rich ore; which continued to increase in value and extent to such a degree, that the profits



of the proprietors amounted, in several successive years, to one million and a half of dollars. From 1788 to 1810, the produce averaged 1,383,195 dollars, and the profits 527,701 dollars, as may be seen by a reference to the Tables annexed to the Third Section of the Fourth Book. A town of 7,000 inhabitants was formed in the vicinity of the mine, in which 3,100 individuals found daily employment, under the immediate inspection of an Administrador, to whom the proprietors paid a salary of 12,000 dollars, (2,500*l.*) conceiving, very properly, that the value of the situation was the best security for the good conduct of him by whom it was held.

A number of different "Pertinencias" are united at Vălĕncĭānă, the works in the interior occupying nearly half an English mile in extent. In order to give access to the different levels, various shafts have been sunk, the first of which, called the Tiro Viejo de San Antonio, is said to have cost 396,000 dollars. Through this the first "Bonanza" was raised. The Tiro de Burgos, and the Boca de San Ramon, were next purchased and incorporated with the great mine, (they cost 82,000 dollars;) and the Hexagon shaft of Nuestra Señora de Guadalupe was afterwards sunk at an expence of 700,000 dollars. All these being deemed insufficient, the great Octagon shaft, called El Tiro General, was begun in 1801, and carried on until the commencement of the Revolution, when it had cost nearly one million of dollars, and attained the depth of six hundred and

thirty-five Mexican varas. When the Company took possession of the mine, the whole of the interior was filled with water to within one hundred and eighty-five varas of the mouth of the great shaft: there were consequently four hundred and fifty varas to drain, and this not merely in perpendicular depth, but disseminated throughout the whole of the workings, most of which had been so long under water that the communications were destroyed, the timbering falling to pieces, and many of the lower levels filled up with masses of rock, or Tĕpĕtātĕ, detached by the action of the water from those above. Had this volume of water proceeded from internal springs, the attempt to carry it off by any power of machinery would have been hopeless; but up to a very late period, the mine of Valenciana was distinguished by its extreme dryness, which was such that the workmen were at times much incommoded by the dust. The water was first admitted by an injudicious communication with the neighbouring mine of Tĕpĕyāc, and it was allowed to accumulate during the whole of the Revolution, the machinery having been much injured by Hidalgo's troops in 1810, and subsequently destroyed by Mina's followers, after his unsuccessful attempt upon Guanajuato in 1818. The effect of such an accumulation in a country where a river is often formed in an hour by the Tropical rains, can hardly be conceived by those who are not acquainted with their violence. It was such that no individual could have undertaken the

task of repairing the ruin, which this long season of abandonment had occasioned. Even for a Company it may be regarded as one of the boldest mining speculations ever yet attempted.

The drainage commenced on the 1st of February 1825. Steam-engines were not employed upon it, on account of the scarcity of fuel; but eight Malacates (horse-whims) of the largest kind were erected round the Tiro General, and kept at work day and night without intermission for twenty-one months, in which time they lowered the water 185 varas. As it descended, the levels which became accessible were repaired, and ores raised wherever veins of any promise appeared; and such was the vigour and activity with which these operations were carried on, that, (as I have already stated) a "Barra," or share in the Valenciana, which, in 1824, would not have sold for 20,000 dollars, was thought by the natives to be worth 100,000 dollars at the time of my visit. It is indeed true, that the difficulties of the drainage increase in proportion to the depth from which the water must be raised; but then they diminish in other respects, because the mine contracts below the level of La Soledad, towards which the water was gradually descending, and the volume of water to be raised consequently decreases. Upon the whole, I saw no reason to question the probability of a favourable result, and the natives were very sanguine in their anticipations of it, fixing for the completion of the drainage the term of eighteen

months. Long before this period arrives many valuable levels will be opened, which will prevent the prosecution of the enterprise from being, as it has hitherto proved, a drain upon the Association; for it is not so much in the deepest levels, (which are supposed to have exceeded the limits within which the Veta Madre of Guanajuato has proved hitherto most productive,) as in the extension of the lateral workings, that the value of the Valenciana as a mine is thought to consist. The outlay in September 1826 was 672,264 dollars, including the alimentos to the proprietors, which amount to 24,000 dollars annually.

We entered the Valenciana by the Boca de Sān Cāyĕtānŏ, at which the old Count Valenciana began his operations; a flight of steps, which even ladies can descend without difficulty, leads to the Capilla, about sixty varas from the surface, where passages branch off to different workings in the interior of the mine. Here a prayer is usually recited by the chief miner before a large picture of the Virgin, and after this the more fatiguing part of the excursion commences. We passed nearly five hours in exploring the different workings, the extent of which exceeds all that a person acquainted only with ordinary mines can imagine. I found the ventilation in general good, except in some "labores" where no communication with the shafts had been yet established. In these the thermometer rose to 90° and 94° of Farenheit; and the heat was very oppres-

sive; but even close to the water's edge there was nothing like foul air. The operation of retimbering, and, in many parts, of digging out the communications anew, was proceeding rapidly, and from some levels ores were raised which produced at times silver enough very nearly to cover the weekly expences of the mine. These amounted to six thousand dollars, including both the mining operations and the malacate horses employed for the drainage, which were upwards of three hundred in number; each malacate requiring thirty horses in the twenty-four hours.

On re-ascending from the lower levels, we visited the Tiro General, which is both a wonderful and an imposing sight. Its dimensions are unnecessarily large, but it is sunk with a magnificence unparalleled in the annals of European mining, the diameter being eleven Varas. The whole of the Tiro is sunk in solid masonry, and the sixteen cueros, or leather buckets, by which the water is raised, though composed each of two bullock's hides, are lost in the immense dimensions of the shaft.

The greatest praise is due to Mr. Williamson, the principal commissioner of the Anglo-Mexican Association, for the constancy that he has displayed in carrying on the drainage of the Valenciana with the means within his reach. Public opinion was unfavourable to the undertaking, until he demonstrated its practicability; and although in the deeper levels the application of steam may be necessary,

yet in a contract limited with regard to time, there can be no doubt that he has rendered the most essential service to the adventurers, by turning to all possible account the powers of the native machinery, which have been much underrated in Europe. What he has been enabled to effect by a proper application of them both at Valenciana, and in the mines of Sirena and Villalpando, may serve as an encouragement to those who are engaged in speculations in districts, where, either from the scarcity of fuel, or the difficulty of access, European machinery never can be introduced. The absurdity of the indiscriminate use of it, contemplated in 1824, has been already demonstrated. Many mines may be made to produce a reasonable profit for a given time by the use of the Malacate, that would never repay the costs of a steam-engine, doubled, as they always must be, by the expence of conveying it from the coast. There is a point indeed beyond which the Malacates cease to act; yet even then, with so many obstacles to be overcome, it is only on mines the richness of which is well ascertained, (as at Real del Monte, or Bolaños,) that it would be prudent or advisable to hazard the substitution of European machinery, with all its attendant train of workmen and artificers.

Besides the mines already enumerated, the Anglo-Mexican Company possesses that of Mĕllādŏ, belonging to the family of Rūhl. The contract and Alimentos are the same as those of Villalpando. The

mine was almost paying its own expences in 1826, the weekly sales being about seven hundred dollars; but the drainage was proceeding very slowly in consequence of the difficulty of coming to an arrangement with the proprietors of the neighbouring mines. The works in Tepiyac were likewise suspended, the contract with the proprietor, Colonel Chico, being considered disadvantageous; it was thought, however, that more favourable terms would be obtained. In 1826 the Alimentos were 16,000 dollars; making a yearly disbursement of 88,000 dollars in all on the part of the Company, the periodical recurrence of which, in conjunction with the very large investment required by some of the mines, has proved a burthen heavier than many of the shareholders were inclined to bear.

That they might have commenced their operations on more favourable terms, had they possessed the knowledge of the country which they have since acquired, there can be little doubt; but even now, deducting from their future profits all their unnecessary expenditure in salaries, and machinery, and confining their works entirely to their principal mines, it is the opinion of their agents, that their whole outlay may be repaid in three years, and that their profits will amount subsequently to twenty-six and a half per cent. upon their nominal Capital.

I do not vouch for the correctness of this calculation, but I give it as the opinion of a gentleman extremely temperate in all his views, much

looked up to and respected by the natives, and indefatigable in his efforts to promote the interests of those, by whom he has been entrusted with the conduct of an enterprise of greater magnitude than any in which British Capital has been employed hitherto beyond the limits of the British dominions.

Both Mr. Williamson and Mr. Jones do justice to the liberality and good faith displayed by the Mexican proprietors in all their transactions with the Company. The accounts of each mine are balanced and finally wound up at the end of every year; and nothing has yet occurred to interrupt this good understanding, by which the interests of both parties are so effectually promoted.

17th and 18th of November. I passed both these days in visiting the mines worked by the United Mexican Company at Guanajuato, the most important of which are Rāyăs, Sĕchō, and Cātă.

The first of these "San Juan de Rāyăs," (so called from its original proprietor,) is one of the most valuable mines upon the Veta Madre; and the most ancient document in the archives of Guanajuato is the certificate of its denunciation. It is situated in one of those Cañadas, or ravines, in which the great riches of the vein have been usually found concentrated, immediately below the mines of Santa Anita, and San Vicente, both of which are prevented from pushing their works downward by levels extending from the mine of Rayas below the whole of their "Pertinencias," as marked out upon the surface.

The right of thus intercepting the workings of another mine is conceded by the Mining Code, according to which the "Pertinencia" only extends two hundred varas in perpendicular depth. Below this the ground is free, and the desire to secure it in the richer portions of the vein often occasions a trial of activity between the proprietors of two neighbouring shafts. The one who succeeds is said to "encampanar" his rival; and as the evil cannot be remedied, he enjoys afterwards undisturbed possession of the vein, from immediately below the pertinencia of his adversary, down to any depth to which he may find it convenient to work.

The extraordinary richness of the ores of Santa Anīta, some of which were sold during the great Bonānza of that mine in 1740 for their weight in silver, in consequence of the large proportion of gold contained in them, first induced the grandfather of the present Marquis of Rayas, (Don José Sardanēta,) who had acquired ten bars in the mine as "Aviador," to endeavour to "encampanar" the "pertinencias" on the upper part of the ravine, by carrying his own works below them. After several years spent in the attempt, which was prosecuted slowly from the want of funds, he died without having attained his object, bequeathing his projects to his son, and assuring him with his last breath that although he ended his life in poverty himself, a little perseverance in his plans would ensure opulence to his descendants.

This prophecy was fulfilled. The vein of Santa

Ana was found to increase in richness as it increased in depth, and Rāyăs having obtained exclusive possession of it, the shaft of Santa Rosa was sunk, through which the first great Bonanza was obtained.

This rich mass of ores (clavo rico) being exhausted, new workings were tried in a S. E. direction, and the shaft of San Miguel was sunk by the father of the present proprietor, at an expence of 700,000 dollars: through this the family of Sardaneta obtained a second Bonanza, which lasted several years, and produced a net profit of eleven millions of dollars, clear of all expences.

From 1760 till 1780 the Mine continued to be worked with considerable profit; but in that year an accident occurred, which very nearly caused it to be entirely given up. A torrent, formed suddenly in the mountains, took its course down the Cañada of Rayas, and entered the mouth of the mine, which had no protection against so unforeseen a danger, filling in a moment the lower levels, and destroying almost all the workmen employed at the time. So great was the volume of water admitted, that nineteen years were consumed in the drainage, which was not completed till 1799, when the mine was again rendered productive, and yielded, in each of the four succeeding years, a clear profit of 400,000 dollars. Since then, the greatest part of the produce has been absorbed by the construction of the new Tiro General, commenced by the pre-

sent Marquis in 1805. It is a stupendous undertaking, the shaft being an octagon, like that of the Valenciana, but exceeding it in diameter by two varas and a half. The depth, however, is only 450 varas in lieu of 635.

When the Civil War broke out, 318 varas of this shaft had been sunk, but the Marquis was too much impoverished by the Revolution to carry on so Herculean a labour out of his own resources, after the declaration of Independence in 1821; and was consequently compelled to apply for assistance to the British United Company, of which his cousin, Don Lucas Alaman, is the principal director. The Company, finding it impossible to attempt the drainage of the mine by the shaft of Santa Rosa, or by that of San Mĭgūel, which has now fallen entirely in, agreed to undertake the continuation of the Tiro General, which, when concluded, will lay open the rich levels called La Sangre de Cristo, and render accessible a large portion of the vein that has never hitherto been explored.

In November, 1826, forty-nine varas had been added by the Company to the 318 sunk by the Marquis: eighty varas still remained; but the work was proceeding at the rate of one vara and a half weekly, and it was expected that as soon as the number of malacates, which it was intended to apply, could be increased from six to eight, half a vara more might be accomplished. It is in the erection of these malacates that the principal ex-

pence of the enterprise has consisted; for the mouth of the great shaft of Rayas being situated upon a steep slope, it has been found necessary to excavate the mountain on one side, and to raise a platform upon the other, in order to command a sufficient space for the action of the machinery. One of the Mălăcātĕs of Rayas is the largest ever built in America, the cylinder, or drum, being eight and a half varas in diameter, and the palanca, or beam, by which it is moved, twenty-four varas in length; it is worked by eight horses, which are changed every three hours, and occupies the whole of an enormous "Galera," built in the vicinity of the shaft.

When the Company commenced its operations, the Tiro General was inaccessible from the quantity of water that it contained. This was supposed to proceed from some internal communication with the mine, and it consequently became requisite to carry on the drainage of the two simultaneously; for which purpose three Malacates were erected at the shaft of Santa Rosa. By their operation, the water was gradually lowered eighty-one varas and three-quarters, and the bottom of the new shaft laid open; but it was not until October 1825, that it was rendered sufficiently accessible for the great work of deepening it to recommence. Even then it was only with difficulty that workmen were found willing to undertake the task, for of all mining labours there are none so dangerous as those which are

carried on in an open shaft of such enormous depth, that the smallest stone detached from above, might prove fatal in its descent to some one of those engaged beneath. In addition to this, the water oozes continually from the sides of the shaft, loosening the earth, and keeping the miners below constantly wet; and as there is no "Partido," or share in the ore raised, to compensate these disadvantages, it is only by giving great additional wages that a supply of hands can be procured.

I know few sights more interesting than the operation of blasting in the shafts of Rayas. After each "barretero" has undermined the portion of rock allotted to him, he is drawn up to the surface; the ropes belonging to the different malacates are coiled up, so as to leave every thing clear below, and a man called the "Pĕgădōr" descends, whose business it is to fire the slow matches communicating with the mines below.

As his chance of escaping the effects of the explosion consists in being drawn up with such rapidity as to be placed beyond the reach of the fragments of rock that are projected into the air, the lightest malacate is prepared for his use, and two horses are attached to it, selected for their swiftness and courage, and called Caballos del Pegador, from being reserved for this particular purpose. The man is let down slowly, carrying with him a light, and a small rope, one end of which is held by one of

the overseers who is stationed at the mouth of the shaft. A breathless silence is observed until the signal is given from below by pulling the cord of communication, when the two men by whom the horses are previously held, release their heads, and they dash off at full speed until they are stopped, either by the noise of the first explosion, or by seeing from the quantity of cord wound round the cylinder of the malacate, that the Pegador is already raised to a height of sixty or seventy varas, and is consequently beyond the reach of danger.

It often happens that the matches do not ignite, in which case the Pegador is lowered down again, and the whole operation repeated, until all the mines have exploded. But in spite of every precaution, accidents will frequently occur, and there are more Pegadores maimed, or destroyed, than any other kind of mining servants. They acquire, however, great presence of mind in the course of their arduous business, for the Marquis of Rayas told me that a few weeks before my visit, the man whom I saw descend, after lighting all the matches, found himself abandoned at the bottom of the mine from the over anxiety of those above, who, mistaking a mere vibration of the cord for the signal, ordered the horses to start, and drew up the malacate rope far beyond his reach, before either he or they became aware of the mistake. Instead of losing courage, or wasting time in fruitless efforts to make himself heard above,

the Pagador instantly tore out the matches, and was fortunate enough to extinguish them all (seven in number) in time to prevent an explosion.

After dining at the Tiro General, where we were most magnificently entertained by the Marquis of Rayas, we proceeded to visit the mine itself, in company with Don Domingo Lano de la Vega, the managing agent of the United Company in the district of Guanajuato. The descent into the mine of Rayas, is by a flight of steps, down which ladies may be carried by Indians in a chair with poles attached to it; Mrs. Ward adopted this mode of conveyance, and found it by no means disagreeable. There was, however, but little to be seen of any interest, except the huge excavations from which the "*Claros ricos*" of the first Bonanza are said to have been extracted, all the best levels being still under water. From those which have been drained, ores to the amount of 75,000 dollars had been raised in November 1826, at which time the total outlay of the Association upon the mine amounted to 412,000 dollars. Of its repayment, and of the probability of very large ultimate profits, no reasonable doubt can be entertained; for Rayas is regarded as one of the richest mines in the world; its ores being, in the deeper levels, both abundant, and of such quality, from the Ley de Oro which they contain, that a very few cargas are equivalent to a much more copious extraction from any other mine. The proportion of gold has been found to amount, in some of the rich-

est stones, to 2,100 grains in the marc; and in the ores called "Guija de Oro," native gold is found disseminated in considerable quantities in the Quartz. I had an opportunity of observing in this mine, as well as in the Valenciana, the weight of the loads of ore brought up to the mouth of the shaft by the Tenateros, (carriers;) I saw myself loads of thirteen, fifteen, and one of sixteen and a half Arrobas, (325, 375, and 412½ English pounds,) delivered at the *despacho*, or receiving-rooms, by Indians, not distinguished by any appearance of extraordinary muscular strength, but inured from their infancy to this species of exertion, by which the muscles of the neck and back acquire a strength much beyond that possessed by any other member of the body.

Since its first discovery in 1556, Rayas appears, by the books of the proprietors, to have paid to the Provincial Treasury, as the King's fifth, the sum of 17,363,000 dollars. It has not yet nearly approached the depth at which the produce of the Veta Madre is supposed by Humboldt to become less valuable; and as a large tract of virgin ground will be laid open by the Tiro General, it may be considered almost as a new mine, with all the security for its future productiveness that an experience of three centuries can give. In the course of the present year, the works may be expected to be completed, and the company may then look for immediate and valuable returns.

The mine of Sĕchō was worked formerly without

profit, and subsequently abandoned. The adventurers who denounced it anew, and from whom the United Company has obtained a share as "Aviador," discovered almost at the surface a "*clavo rico*," or rich mass of ores, which had been overlooked by the former proprietors, but which proved sufficient to repay, at once, a great part of the advances made by the Company; as the best ores (Polvillos) sold for one hundred and eighty dollars the Quintal, or six hundred dollars the Carga of fourteen arrobas. This little Bonanza was interrupted by what is termed a Cavallo de Bronze, or mass of rock, of almost incredible hardness; which it required much time to cut through. This being effected, the vein was again found to produce excellent ores, and when I saw it, about two hundred Cargas were raised weekly from different "*labores*," which were bought up eagerly by the "Rescatadores," at thirty-five and thirty-seven dollars the carga, for the Azogues, or ordinary Ores, and forty-five dollars the quintal, for the Polvillos.

From all appearances, there is reason to expect that Sěchō may prove a most valuable mine, for it is situated upon a part of the Veta Madre which, in every direction around, has produced immense wealth; but there is no certainty, in the opinion of the old miners, until the workings reach one hundred varas in depth, that being the line at which the great riches of the vein have been hitherto found to commence. In the mean time, the speculation

is attended with no risk, as the mine pays its own expences; and should it turn out well, the net profits will consequently be in the same proportion as the additional produce.

The third mine habilitated by the United Company in Guanajūato, is one of the oldest in the district, Cata. It did not attain any great celebrity until the commencement of the last century, when it was worked, in conjunction with Mellado, by Don Francisco Matias de Būstŏ, afterwards created Marquis of San Clĕmēntĕ, and celebrated as the richest man of his age. Cātă occupies the whole of the valley of that name; its extreme depth is three hundred and sixty varas; yet the mine has been drained, and put into complete repair, by the application of Mexican machinery, in fourteen months, with an outlay not exceeding 255,000 dollars. As to the future produce, very different opinions are entertained. Mr. Alaman, and the managing agent, Mr. Lazo de la Vega, are sanguine in their expectations of success, but the public in general regard the mine as exhausted, and think the attempt to work it anew injudicious. From this, however, no conclusion can be drawn, a similar sentence having been pronounced against many other celebrated mines at the close of their first great Bonanzas, which, when taken up anew after a lapse of several years, were found amply to repay their new proprietors. Such was the case with the mine of La Quebradīlla at Zacatēcas, when its management was undertaken by

La Borde; with the Păvĕllōn at Sombrerete, when denounced by the Făgŏāgă family; and with the famous mine of Bărrāncŏ at Bŏlānŏs, which, after being given up by its first proprietor, (Barranco,) gave immense wealth and his title to the second, (the Marquis of Vibanco,) and afterwards yielded an enormous mass of silver when worked by a Company formed for the purpose, although with little profit to the adventurers, on account of the expences of the drainage.

It is to be hoped that the name of Cata may be added to this list, although, in 1826, the amount of silver raised did not exceed 19,000 dollars.

The United Company possesses four Haciendas de beneficio, containing in all seventy-two arrastres. That of San Matias, which I visited, belongs to the Marquis of Rāyas, and is rented by the Association. It was exceedingly well fitted up in all its parts, but the process of amalgamation being nearly the same there as at Sălgādŏ, any farther description of it would be superfluous.

The necessity of fitting up these Haciendas, and of bringing all the larger timber employed in them from the Sierra of Maravatio, (in the vicinity of Tlālpŭjāhŭa,) a distance of nearly forty-eight leagues, has been one of the great drains upon the Companies; this has now ceased, and, the works having been well executed, they will require but few repairs during the remainder of the term for which the contracts are held.

The town of Guănăjūātŏ, in the immediate vicinity of which all the mines mentioned in this sketch are situated, contains many splendid memorials of the former wealth of its inhabitants. The houses of the families of Ŏtērŏ, Vălĕncĭānă, Rūhl, and Pĕrĕz Gālvĕz, are all magnificent, as are the Church, formerly belonging to the Jesuits, built by the Marquis of Rayas, the rich ornaments presented by the family of San Clemente to the Parroquia, the road to the Valenciana, and the numerous chapels, and religious edifices, constructed in different directions, in the surrounding district. Many of these are still in an unfinished state, for the piety of the miners usually commenced with a Bonanza, and this did not always last long enough to enable them to complete the works, which it prompted them to undertake.

A great part of the landed property both in Guanajuato and in the neighbouring States, likewise belongs to mining families. The Countess Ruhl has large possessions near Aguas Calientes. The estates of the Pĕrĕz Gālvĕz family occupy no inconsiderable portion of San Luis Pŏtŏsī; and the Ŏbrĕgōnĕs, (descendants of the first Conde de Valenciana,) possess some beautiful Haciendas near Leon, with many others of less importance, which it is needless to enumerate.

From the Governor of the State, Don Carlos Montesdeoca, a man of liberal and enlightened views, the Foreign Companies have received every encou-

ragement and protection; and it is principally in consequence of his exertions that they have been enabled so soon to overcome those national prejudices against strangers, with which all our Companies had to contend upon their first establishment. In November 1826, not a trace of this feeling seemed to remain. The Marquis of Rayas, indeed, whose family is celebrated for its piety, was still intractable enough to object to the employment of heretics in his mine, but he proved by his courtesy towards all my party that he did not consider a friendly intercourse with us as at all objectionable. In this respect the clergy of Guanajuato have shown an admirable example, many of them having advocated from the pulpit the cause of foreigners, and endeavoured to convince their countrymen of the advantages to be derived from an unreserved communication with them.

The State of Gŭanăjūatŏ contains, according to the census of 1825, a registered population of 382,829 souls, or 450,000, if something more than one-sixth be added to cover the deficiencies in the official returns. These are supposed to have been unusually incorrect, in consequence of an attempt to enforce the payment of a sort of Income tax, at the very time when the census was forming.

The revenue consists, as has been stated generally in the Fourth Section of the Third Book, in the Tobacco monopoly, the Alcavalas, the Mint dues, and Municipal duties payable on various articles of

domestic produce and manufacture, with three per cent. upon the foreign goods consumed in the territories of the State. The whole yielded, in the year ending January 1826, 247,810 dollars, while the expences of the Government, (contingent included,) amounted to 264,010 dollars. The Governor attributed the deficit (16,199 dollars) to the failure of the Income tax, or Contribucion directa, which, though calculated upon the supposed value of the labour of each individual for three days in the year, only produced 5,042 dollars in all.

The Tobacco fabrica yielded 54,704 dollars; and this, after deducting 22,266 dollars due to the Federation for Tobacco in leaf, left a balance of 32,438 dollars in favour of the State. Great improvements may however be expected in the receipts of this department; the annual profits of the Cigar manufactories of Guanajuato before the year 1810, in the eight "Administraciones" established in the principal towns, having averaged one hundred and fifty-seven thousand dollars.

One hundred and thirty thousand, eight hundred and nineteen dollars were the produce of the Alcavalas, and 30,085 dollars of the Municipal duties. The receipts at the mint did not exceed 27,127 dollars, the quantity of silver raised in 1825 being very small: but this, as well as most of the other branches of the revenue, were likely to increase, and it was expected that the receipts of 1826 would fully cover the expenditure.

Guanajūato may be called either a Mining or an Agricultural State, for the prosperity of the two branches is so closely connected that one can hardly flourish without the other. The importance of the great Haciendas of the Bājīo ceased at the same moment with that of the mines, and is reviving at present in proportion as the capitals invested in them create anew a demand for agricultural produce; while the increased produce, on the other hand, facilitates all those complicated operations, by which alone the mines can be brought into full activity.

Manufactures of wool and cotton abounded formerly in the towns of Léōn, Ĭrápūatŏ, Sílāŏ, Săn Míguēl, and Sālámāncă, (usually designated as "Las Villas;") but the "Mantas," "Rebozos," "Pañetes," and "Gergetillas,"* for which they were famous, have already been replaced by similar articles from Europe and the United States. Their decadence has fortunately been gradual during the last fifteen years, so that it will require no very violent transition to give employment to the hands thus occupied, in some other pursuit, where no competition is to be apprehended.

The State Constitution of Guanajuato was sworn in April 1825. Since the fall of Iturbide, public tranquillity has not been in any way disturbed there, and at the period of my visit nothing but a continuance of it seemed requisite in order to develope

* By these names the coarse cloths and wrappers most in use amongst the lower orders are distinguished.

the internal resources of the State, and to restore its inhabitants to that prosperity which they enjoyed, in an almost unexampled degree, before the Revolution. This seemed to be the general feeling of all those with whom I held any intercourse. Peace at home and abroad was the common object, the universal wish; and however discouraging an appearance affairs may since have assumed, the existence of such sentiments throughout the country affords ground to hope that any disturbances that may arise will never again be sufficiently generalized to affect the mass of the population, or to lead to a renewal of the disastrous scenes of the Civil War of 1810. One good effect the Revolution has already produced in the attention now shown to the education of the rising generation. In 1824, Guanajuato did not possess a single school; in 1826, the sons of respectable parents could obtain a decent education even at Valenciana and Rayas, where schools upon the Lancasterian principle had been established by the Miners themselves for the improvement of their families.

SECTION II.

ROAD FROM GUANAJUATO TO SAN LUIS POTOSI.—HACIENDA DEL JARAL.—STATE OF SAN LUIS.—ROAD TO CATORCE, AND MINES OF THAT DISTRICT.

We took leave of Guanajuato and its hospitable inhabitants on the 20th of November, and continued our journey towards San Luis Pŏtŏsī, which both Mr. Martin and myself were desirous to visit, on account of its growing importance as a commercial town. We were likewise anxious to see the celebrated mining District of Catorce, which is very little known in Mexico; and notwithstanding the assurances of the natives, that it would be impossible for us, with children and a lady of the party, to attempt to cross the country between Catorce and Durango, where we should find neither houses, nor accommodations of any kind, we were not without hopes of discovering some direct road to the North that would exempt us from that worst of all evils—

the necessity of passing twice over the same line of desolate and monotonous country. This we must have done, had we proceeded from Guanajuato to Durango by the usual route through Zăcătēcăs and Sōmbrĕrētĕ, by which alone we could hope to reach Aguas Calientes on our return, where it was our intention to branch off towards Guadalajara and Valladolid. The appearance of the map was not indeed encouraging, for there is not a single Rancho laid down in the whole tract of country that we were about to traverse; but Mrs. Ward having resolved rather to take her chance of bivouacs, and a little starvation, than to be left behind until we could meet her again at Aguas Calientes, we determined to take our own line, and to trust to Providence to carry us through. Our horses and mules were quite refreshed by a week's rest, and, with the exception of my little girl, who was still far from strong, we were all in admirable travelling condition ourselves; so that we looked forward almost with pleasure to the difficulties which we were about to encounter.

We left Guanajuato by the gate of Marfil, and proceeded to Silao, a "Pueblo Ranchero," surrounded with maize fields, about four and a half leagues off, and from thence to the Hacienda de Chĭchĭmĭquillăs, situated in a barranca full of Aguacates, fig-trees, oranges, and magnificent Palma Christi. The climate was almost "templado," for the road from Silao, which is itself 1,389 feet lower than

Mexico, is a gradual slope, and the Hacienda is protected by surrounding hills. The country about is beautifully cultivated, and on the plains around I shot a number of hares, and several wood-pigeons of a very large and delicate kind.

It was our intention to have proceeded on the first day to La Tlăchĭquēră, another Hacienda, stated to be half-way between Guănăjūātŏ and San Fĕlīpĕ, in the centre of a ridge of mountains, which can only be avoided by taking a circuitous route through Leon. Most fortunately, on making inquiries at Chĭchĭmĭquīllăs, we found so great a difference of opinion amongst the natives respecting the distance, some calling it five, and others fifteen leagues, that we resolved not to attempt the passage of the Sierra without being sure of having daylight enough before us to accomplish it. On the 21st we set out at a very early hour, and, after winding for near two leagues up the bed of a river, full of deep sand and rocks, we plunged at once into the heart of the mountains, where our guide soon grew bewildered, and at mid-day confessed that he no longer knew where he was. Having ascertained, as well as we could, the direction in which the Tlachiquera ought to lie, we toiled on for nine long hours, sometimes ascending places where the united exertions of all our men and mules could hardly make the coach advance half a mile in an hour; at others, opening a passage with our swords through the cactuses and thorny bushes which obstructed the way; and, on

one occasion, traversing a slope so exceedingly precipitous, that three lassos passed through the carriage, and over the roof, with all the strain upon them, on the upper side, that men and horses could apply, were hardly able to keep the carriage upon its wheels, or to prevent it from descending into the valley below. This is the real advantage of the lasso. As an ordinary mode of drawing, it can only be used in a country like the Pampas, where you traverse a plain of some hundreds of miles in extent; but it may always be applied on an emergency, where the saddle is provided with a ring, or a pommel suited to the purpose, and it is then of the most essential service. Wherever we came to a pass too steep for our jaded mules to face, we attached lassos to different parts of the carriage, and, as no horse refuses to draw in this manner, by the united exertions of the party, the obstacle was soon overcome. We were nearly exhausted, however, with such continued efforts, and still more by the want of water, when Hilario, who had been detached to take a view of the country from the highest ridge in sight, brought us the joyful intelligence that he had discovered the Hacienda, from which we were not more than two leagues distant. Notwithstanding this favourable report, we did not reach it till long after dusk, having been twelve long hours upon the road, without seeing a house or a human being. Our difficulties were much increased by the impossibility of catching any of our fresh mules to supply

the place of those who began the day in the coach; for the country was so covered with Nopales and loose stones, that it was impossible for the hardiest lassoer of the party to put his horse into a gallop, without imminent risk both to the animal and to himself. In general we stopped to change at some "corral," or enclosure, into which the loose mules and horses are driven; but on the road to the Tlachiquera such an accommodation was desired in vain. To compensate this we had the assistance of the bull-dog, whom I have mentioned as the guardian of the coach upon the road. The natural ferocity of this beast had long lain dormant, but it was roused by the cries of the servants, and joining them in their pursuit of the mules, he fastened upon one of the animals by the nose, and in an instant pinned it to the ground; nor was it without great difficulty that he was compelled to relinquish his hold. From this moment he assumed quite a new character, and attacked in so wanton a manner pigs, and every other creature that came in his way, that I was almost glad to lose him, as we did shortly afterwards, on entering San Luis Pŏtŏsī.

Our accommodations at the Tlachiquera were exceedingly bad, for there was nothing but the size of the walls to denote the former importance of the estate, which was totally ruined during the Revolution. The Rancho del Vĕnădītŏ, from which the Viceroy Ăpŏdācă took his title, in consequence of the capture of Mina, is in the vicinity of La Tlăchĭ-

qūerā; and the whole Sierra was constantly overrun by parties of Insurgents or Royalists. There is a fine presa (reservoir) of water, however, immediately below the house, and provisions were abundant; but Mrs. Ward was lodged in a barn, where she was considerably annoyed on the following morning by a mule, that forced its way in through the shattered door, just as she was beginning her toilet, notwithstanding her vehement entreaties that no one would come in. The rest of the party were crowded into one small sala, where we supped first, and then put up our beds, there not being room for them and the table at the same time.

Nov. 22. We reached Sān Fĕlīpĕ, a town formerly of some importance, but now in ruins, many of the houses being unroofed, while the Adobe walls, deprived of their usual coating of white, present a most desolate appearance. The first four leagues of the road from La Tlăchĭquĕrā were steep and mountainous, but after crossing a ravine, at a Rancho called El Passo de los Arrāstres, we entered the elevated plains of San Felipe, and continued to traverse them without interruption for the space of six or seven leagues. I never saw any thing so extraordinary as the number of hares in every part of this plain. I shot two or three after breakfast in some bushes by the side of the road, and gave them to one of the servants to hang to the pommel of his saddle; his horse, frightened with the unusual load, ran away, and I believe, that without exaggeration, I may say, that

before he had gone a quarter of a mile, he was driving fifty hares before him. They put one another up, and formed altogether a most curious assemblage, as they scoured along before my startled man, and his still more startled steed.* Three leagues from the Passo de los Arrastres, there is a large Hacienda called San Jūan de los Llānos, in a very dilapidated state, but with an abundant supply of water. The "presa" was covered with ducks, some of which I shot, and they formed, with the hares, a very comfortable addition to the slender fare that San Felipe afforded us; where the venta was tolerably clean, and air-tight, but meat was not to be obtained, except at market-hours.

Nov. 23. From San Felīpe to El Jărāl, ten leagues.

About two leagues from San Felipe, there is a ramification of the Sierra Madre to cross, with a long descent, or mal passo, called El puerto de San Bărtōlŏ, very inconvenient for carriages, but not absolutely dangerous; at least, we did not think so after La Tlachiquera. The ascent and descent occupy about three leagues. We breakfasted at the pueblo de San Bărtōlŏ, from whence to the Jărāl we passed through a succession of vast potreros, well walled in, and interspersed with fields of Indian corn.

The Hacienda is seen from a considerable distance

* The servant was an Englishman, and was riding with a snaffle bridle. I never saw a horse succeed yet in running away with a Mexican upon him, or with a Mexican bit.

in the centre of a fine valley, about twelve leagues in circumference, the whole of which belongs to the Marques del Jăral, the most opulent landed proprietor of Mexico, and one of the most *extensive* landholders in the world. Besides the estate of the Jăral, he possesses several large Haciendas in Zăcătēcăs, and his lands extend, with little interruption, as far North as Săn Măteo, from whence he takes his second title. His riches are immense, and proceed from various sources. According to the data given me by the Administrador, he has of ganado mayor, y menor, (horned cattle, sheep, and goats,) with horses, and mules, (cavallada, y mulada,) at Sierra Hermosa, and other places, three millions of live stock. Of these, 30,000 sheep are sent annually to the Mexican market, where they average from twenty to twenty-four reals, (two and a half and three dollars) each.

As many goats are slaughtered at the Casa de Matanza of the Jăral, where tallow (Cebo) is made from the fat, which sells upon the spot for four and a half dollars the arroba, and is often retailed in Mexico at two reals the pound. The skins are worth six or eight reals each, and are disposed of to the leather-dressers of Guădălăjără and San Luis Pŏtŏsī.

The ratio of increase for wheat in the valley of the Jăral is twenty-five to one, a thousand fanegas being the ordinary produce of forty fanegas sown. In a good year the crop infinitely exceeds this, and

has been known to amount to two thousand fanegas. When converted into flour in the Count's own mills, the wheat sells at San Luis (sixteen leagues distance) for fourteen and fifteen dollars the Carga, of two fanegas, which are reckoned equivalent to three hundred pounds.

Maize averages usually from two hundred to two hundred and fifty for one; but the price, in ordinary years, seldom rises above twelve reals the fanega.

From five to six thousand arrobas of Chile are likewise produced in the vicinity of the Jărāl. It is worth, in Mexico, six dollars the arroba, while the carriage and alcavala are paid with one.

The great fertility of the valley of the Jărāl is due to the abundant supply of water distributed, apparently with profusion, to every part of the estate, from an immense "presa," constructed sixty years ago by the grandfather of the present Count. The front wall of this "presa" is 2,008 varas in length, and of immense thickness. It intercepts the whole of the water that descends during the rainy season from the surrounding mountains. The basin in which this water is received, though artificial, has, from its size, the appearance of a natural lake. It is surrounded by trees, and is situated about three leagues to the South-west of the house. Part of the road lies, as usual, through uncultivated land, and part through vast fields of maize; but the temperature of the valley formed an agreeable contrast to the cold which we had experienced in crossing the high plains between La Tlăchĭquerá and the Puerto

dĕ Săn Bărtōlŏ; and the sight of any thing like water or vegetation was delightful, after the deserts which we had passed, covered with broken rocks, the cactus, and dwarf palms. I rode to the reservoir on one of the Count's horses, not of the old breed, for which the Hacienda was celebrated before the Revolution, (for that has become almost extinct,) but spirited, and with high, though easy action.

Nothing could be more hospitable than our reception at the Jărāl, with the exception of the absence of the master, who either from shyness, or, as it was alleged, from urgent business, left the Hacienda with his family the day before our arrival, and deputed his Administrador to do the honours. We found, however, a splendid dinner prepared, and the whole house thrown open for our accommodation, with a crowd of servants in waiting to take charge of the baggage, and to arrange it in the different rooms. On the following morning, when, notwithstanding the solicitations of the Administrador, we pursued our journey towards San Luis, a mule was sent with us, laden with a whole sheep, a dozen fowls, four cheeses, a quantity of bread and fruit, and four bottles of a strong spirit called vino Mescal, resembling whiskey in flavour, but extracted from the Măgūey, in a distillery recently established by the Count.

The Jărāl is the last place of any note in the State of Guănăjūatŏ. The village attached to the Hacienda contains three thousand inhabitants, five hundred of whom are more immediately "depen-

dientes de la casa," (yearly servants of the family,) while the rest, though not in permanent annual employment, derive their subsistence from the same source. The Count's house, with the church and other buildings connected with it, are solid and spacious, though by no means magnificent. The pueblo presents an appearance of wretchedness totally unworthy of its vicinity to the abode of so wealthy a proprietor: it consists almost entirely of mud huts, and many of these are in a state of decay.

Nov. 24. From the Jărāl to San Luis Pŏtŏsī, sixteen leagues.

The road, on leaving the valley of El Jărāl, passes near a large pueblo called El Valle de San Francisco, four leagues from the Hacienda, and runs from thence to Tierra Blanca three leagues, La Pila three leagues, Real de los Pozos two, and San Luis three and a half. La Pila and Los Pozos were formerly amalgamation works, in which the ores from the mines of the Cerro de San Pedro were reduced. These mines have been abandoned for many years on account of the extreme poverty of the ores, which, notwithstanding a "ley de oro," by no means inconsiderable, will not defray the expence of working. Eighty thousand dollars were spent in a fruitless attempt to bring them into activity about ten years ago; but the heaps of old slag that are to be seen at the present day in every direction about San Luis attest their former abundance, as the epithet of Pŏtŏsī, bestowed upon the Intendancy, bespeaks the

reputation which they at one time enjoyed for wealth.

The State of San Luis possesses a population of 250,000 souls. The capital, including the "barrios," or suburbs, which cover a great extent of ground, contains between fifty and sixty thousand inhabitants, and it is supposed that as many more are concentrated within a circle of six leagues in its immediate vicinity.

The State Congress is composed of fourteen deputies, elected in the proportion of one for each twenty thousand souls. In ecclesiastical matters San Luis is dependent upon the Bishoprics of Guădălăjārā and Valladolid, between which the spiritual jurisdiction over its territory is divided.

The revenue proceeds from the same sources as that of Guănăjūātŏ, with the exception of the "Contribucion Directa," which has not been tried. It has proved sufficient to cover, hitherto, the whole expenditure of the State, as well as its "contingent," San Luis, in 1826, not being one dollar in arrears with the Federation. This is partly owing to the excellent management of the present Governor, Don José Ildefonso Diaz de Leon, a man of great activity and intelligence, and partly to the advantages which San Luis derives from its situation as the natural depôt for the trade of Tampico, with the Northern and Western States. Zăcătēcās, Sōmbrĕrētĕ, Dŭrāngŏ, and Guădălăjārā already draw from this source a large proportion of their foreign imports;

and since the building of the new town of Tamaulipas, which, from being upon a more elevated spot than the old town (Pueblo Viejo) of Tampico, is less subject to the vomito, there is every appearance of a rapid increase in this branch of commercial intercourse.

The foreign trade of San Luis is, at present, almost entirely in the hands of Old Spaniards or North Americans. In 1826, there was not a single French or English house established there, although France had appointed a commercial agent to reside in the town; for which office Mr. Martin had selected Don Ignacio Soria, a very respectable man, and one of the deputies in the Legislature of the State. The European imports consisted principally in French brandies, wines, silks, and cloths; English hardware and printed cotton goods; with some "mantas," or ordinary cotton manufactures from the United States. Most of these articles were originally smuggled in, through Tampico, in American bottoms; for, until the commencement of the year 1825, there was no custom-house north of Veracruz; and this advantage rendered competition on the part of the merchants of the Capital, who paid the duties established by the Tariff, impossible. Prices have risen at San Luis in proportion as the facilities for smuggling have diminished; but there are still openings enough for the contraband trader on a line of coast three hundred leagues in extent, and there are few articles of foreign manufacture that may not be pur-

chased in the North at a price much below that at which they must be disposed of, had not the payment of the duties upon them been eluded.

In addition to its foreign trade, San Luis supplies the neighbouring States of Lĕōn and Cŏhăhuīlă with home-made goods of various descriptions. The town abounds in tailors, hatters, leather-dressers, and smiths; a tannery, too, has been lately established there, and, on a small scale, the whole population seems industrious. With the exception of the capital, the State contains no large town. It is divided into Haciendas, few of which exceed thirty "Sitios"* in extent, while the general average is about fourteen.

Many of these Haciendas would be valuable from the extraordinary fertility of the soil, but the want of a market renders the agricultural produce a mere drug. Maize sells, in ordinary years, for four and six reals the Fanega, (one, or one and a half dollar the carga of 300lbs.) and even at this price purchasers are not always to be found.

In 1826, the dryness of the season had given an unusual value to the stock upon hand, (nearly the whole crop of the year being lost,) and maize was selling at twenty reals the fanega in the vicinity of San Luis, and at thirty, and thirty-six reals near Catorce, where the demand was great, and the sup-

* The "Sitio de ganado mayor," of Mexico, comprises a square of five thousand varas, or a superficies of twenty-five millions of varas.

ply precarious; but this was an event of which there had not been an example for upwards of twenty years. It is to the low price of grain in general that the preference given to breeding estates in the North must be attributed. Most of the Haciendas of San Luis are vast sheep-walks, and Dŭrāngŏ, Zacatecas, and Chĭhūāhŭa produce a large proportion of the mules and horses with which the Southern States of the Federation are supplied.

One of the most fertile districts of the old Intendancy of San Luis Potosī, now divided into four sovereign States,* was the Valle del Maīz, on the Eastern declivity of the Cordillera, which separates the *Tierra Caliente* from the Table-land. It was entirely in the hands of Old Spaniards, most of whom perished during the war, and is at present abandoned; but should the project now before the Congress for rendering navigable the River Tămlū ever be carried into execution, the Valle del Maiz might recover its former importance, as a channel would be opened for the conveyance of its produce to the coast.

We passed one whole day at San Luis, (Nov. 25,) in order to make acquaintance with the principal inhabitants, and to collect statistical information, as well as to repair the damage sustained by our travelling equipage, both in the passage of the mountains of La Tlăchĭquērā, and during a violent storm

* Cohahuila and Texas, New Leon, Tamaulipas, and San Luis.

by which we had been surprised on our way from the Jărāl. By leaving Mexico so late in the season, we hoped entirely to escape the rains, but as we drew towards the North we found evident symptoms of their prevalence. At San Luis they assured us that they had hardly seen the sun for forty days, and the swampy state of the country around demonstrated the correctness of the assertion. It is impossible to conceive any thing more trying than the discomfort of a Mexican inn under such circumstances. Without a fire, and often without a roof that will exclude water, there is no possibility of drying the baggage, clothes, or saddles. The poor horses stand shivering, after a hard day's journey, in an open patio, while the paved court, from the violence with which the rain descends, is converted into a pond, through which you have to wade in order to pass from one room to another.

All these delights did we experience on the evening of our arrival, and it was with most sincere pleasure that we found ourselves restored, on the following morning, to the advantages of a bright sun and a cloudless sky, which accompanied us afterwards during the remainder of our journey The yard was filled in an instant with bedding, cloaks, mangas, and hats, suspended upon lines, and in a few hours comfort was, to a certain extent, restored. Unfortunately the sun had not the power to heal the injury done by the cold to our mules and horses, four of which were rendered useless for several days

by swellings on the back, brought on by sudden exposure to the wet night-air.

Both Mr. Martin and I were much pleased by our intercourse with the Governor, who showed every disposition to give us information upon all subjects connected with the resources of the State, and was evidently gratified by our curiosity. He is a native of Catorce, where he has a share in several mines, and is moreover the proprietor of a large Hacienda, (Los Charcos,) with a fortune of 200,000 dollars, acquired entirely by his own exertions. A part of this fortune he has devoted to the public service, by advancing the money required for the establishment of the Tobacco fabrica, (which, in 1826, produced 5,000 dollars monthly, and gave employment to two hundred poor people,) and by becoming a large subscriber to the College recently opened at San Luis Potosi, where instruction is given, free from all expence, to poor students, in Latin, Jurisprudence, Theology, and Constitutional rights.

This institution was founded by a voluntary subscription, for which, in six weeks, 42,000 dollars were collected. It contained fifty-six scholars, besides eighteen pensioners, the sons of respectable families, whose parents were able to contribute one hundred and forty dollars yearly towards the expences of the establishment; and its flourishing state may be regarded as a proof both of the existence of more public spirit than travellers usually give the Mexicans credit for, and of a desire to improve,

which must, in a little time, produce the most beneficial effects.

Nov. 26.—From San Luis to Bocas, twelve leagues.

The Hacienda of Bocas is one of "Cria y labor," (an estate both for breeding, and tillage.) It belongs, with the adjoining Hacienda of Crūces, to an *Obra pia*, or charitable institution, under the direction of the Conde del Peñasco. Bocas contains fourteen "Sitios;" Cruces thirty, on which there are 70,000 sheep, besides horses and mules. Bocas possesses no water for irrigation, and consequently does not reckon upon more than one good year in twenty for maize: in this, the ratio of increase amounts to four hundred, and four hundred and fifty for one. Of the intervening crops, some are lost, but the price of maize seldom exceeds eight reals the fanega, and is often as low as four.

The Hacienda is situated upon a little eminence, in an opening of the hills, which extend across the plain on each side. A river runs at the foot of this ridge; and upon another eminence immediately opposite the house, there is a church, connected with it by a road and an avenue of trees.

The country between San Luis and Bocas is a plain, intersected at intervals by mountain ridges of no considerable height. The road, in the dry season, is good; but when we passed, it was so much injured by the rains, that we were ten hours in performing the twelve leagues.

Nov. 27.—We left Bōcās early, and proceeded

across a country alternately composed of sand and stones, covered with dwarf mimosas, the cactus, and the aloe, to La Hĕdĭōndă, a village seven leagues from Bōcăs, where we breakfasted. From thence to El Vĕnādŏ, another large Pueblo, which we reached at five in the evening, after ten hours travelling, there was not a single object of any interest, with the exception of the hares and rabbits, the number of which was really curious. The inhabitants of El Vĕnādŏ were all in the church upon our arrival, listening to the discourse of a Padre Misionero, whose powerful voice was heard in every corner of the Plaza, rising and falling with that peculiar monotony by which monkish oratory is generally distinguished. We took possession of the empty inn, and, finding the mistress very troublesome upon her return from chapel, we fairly ejected her from her own premises, and secured ourselves from interruption by closing the doors until the following morning, when the payment of her bill without dispute, for the use of her house and stables, reconciled her to her temporary banishment. Sleep, however, or quiet, was out of the question, for every room in the house, and every building near it, were occupied by game-cocks, bred for the Catorce market, and just at that time in training for the great cock-fights in which the miners indulge during the Christmas holidays. About two in the morning, the noise made by these creatures became quite intolerable; and at six, we

were happy to escape from it by commencing our journey.

Nov. 28.—We had a very long day before us, as it was our intention to sleep at the Hacienda of Guădălūpĕ Cārnĭcērŏ, eleven leagues from Cătōrcĕ, and eighteen from El Vĕnādŏ. Fortunately the road was good, particularly the latter part, which leads from the Real de Chārcăs, (a town with about 5,000 inhabitants, six leagues from El Vĕnādŏ,) to the Hacienda, where we arrived before dusk. On the way we passed the Governor's Hacienda of Los Chārcos, surrounded by enclosures six or seven leagues in extent, walled in for "Ganado menor," sheep and goats;) but the country was dreary and deserted, without water or cultivation. At Gŭadălūpĕ, maize cost thirty reals the fanega, (seven dollars and a half the Carga;) and we paid two dollars for permission to water our animals at the "Tanque" belonging to the estate.

Nov. 29.—From Guădălūpĕ to Cătōrcĕ, eleven leagues. During the whole of the way we left the metalliferous mountains of Cătōrcĕ, (running nearly due North and South,) to the East, and drew nearer by degrees to the Cañada, or opening, through which we were to ascend to the town. The name, (La Cañada de los Catorce,) is supposed to have been derived from the death of fourteen Spanish soldiers, who are said to have been killed there by a tribe of Indios Bravos, (unsubdued Indians,) by whom the

mountains were inhabited before the discovery of the mines.

Nothing can be more bleak and dreary than the appearance of the whole Cordillera of Catorce: a few narrow mule-paths, or the white bed of a torrent indistinctly traced upon the surface, alone break the monotonous colouring of the mass; and the town, though placed at an immense height, is invisible from below, being completely hidden by the brow of the mountain: not a tree, not a blade of grass is to be seen in its vicinity; yet fifty years ago the whole district was covered with forests, which might have lasted for centuries, had not the improvident and wasteful spirit of the first adventurers wantonly destroyed these treasures, which to their descendants would have proved invaluable. Whole woods were burnt in order to clear the ground, and the larger timber required for the mines is now brought from a distance of twenty-two leagues.

At the Cañada, where we arrived about two o'clock, the carriage was entirely unloaded, and its contents transferred to a number of asses, which we hired to convey them to the town. Mr. Macartney, the managing agent of the Catorce Company, had the goodness to take charge of the eldest little girl, with a horse perfectly accustomed to the roads; while Mrs. Ward, with the baby in her arms, was seated in a silla de manos, (a sort of sedan-chair, open before,) belonging to the Obregones, which was carried by four Indians. The ascent commences

immediately upon leaving the Cañada, where there are a few Haciendas de beneficio, and two solitary trees; and continues without interruption until the very summit of the mountain is gained, about 1,600 feet above the level of the plain. The path is very narrow and rocky, without any sort of parapet on the side of the precipice; and as in many places there is hardly room for two persons to pass without touching, accidents frequently occur, particularly at the hours when the mules and asses are descending from the mines with ores for the Haciendas in the Cañada below. With an excellent horse it took me exactly one hour and ten minutes to reach the Campo Santo, from whence you first obtain a view of the town; and the rest of the party were much longer, particularly the Mexican maids, whose fears prevented them from riding, and who toiled up the whole way on foot. On reaching the highest ridge, you see Catorce immediately below you, in a sort of hollow, beyond which again the mountain rises precipitately above a thousand feet, the course of the Veta Madre, or great Mother vein, being distinctly designated upon it by the buildings annexed to the mines. The situation of the town itself is very singular, as it is intersected by vast ravines, which occasion no little irregularity in the buildings, (many of the houses having one story on one side and two or three on the other,) and surrounded by masses of rock, amongst which the working classes seek a refuge from the inclemency of the

weather. The view of the lights belonging to these hovels at night, scattered over the dark sides of the mountain, sometimes peeping forth from a barranca, and at others shining bright upon a little platform, so elevated and inaccessible that you can hardly suppose it to be the abode of any human being, is exceedingly singular. Catorce, however, notwithstanding the difficulties of the approach, is abundantly supplied with provisions; meat, fowls, fruit, and all other necessaries being brought from the *Tierra Caliente* to the East, as well as from the Table-land; and the competition in the market is so great, that maize, which, during the scarce season of 1826, had often been worth two and a half and three dollars in the plains below, had been sold constantly in the town at two dollars the fanega.

We were lodged in a house belonging to the Catorce Company, situated in the principal street, (*La calle del Commercio,*) where we met with a most hospitable reception from Mr. Macartney: the house was exceedingly small, but we were infinitely more comfortable in it than we should have been in more spacious quarters, both from his kindness, and because we possessed the advantage of a fireplace, which the severity of the cold rendered a most valuable acquisition. The height of the town of Catorce above the level of the sea, according to the measures taken by Captain Wylde, and given to me by Colonel Grasses, is only 7,760 feet, or 292 feet higher than Mexico; but a difference of four and a half

degrees of latitude makes this elevation much more sensibly felt; and in the winter there are few colder spots than the summit of the Sierra of Catorce. The mine of La Purisima is 390 feet higher than the town, and the Cerro de la Leona 1,110 feet; but the whole range is exposed almost equally to the cold winds from the north and north-west, which sweep across it at times with incredible violence. To the east there in no protection, as the descent towards the coast commences almost immediately; and to the west, between Catorce and that branch of the Sierra Madre upon which the mineral deposits of Zacatecas, Fresnillo, and Sombrerete are situated, there is not a single intervening ridge.

I have heard doubts expressed with regard to the accuracy of the measurements by which the height of Catorce has been ascertained; and from the numberless accidents to which a barometer is exposed, it is certainly possible that Captain Wylde may have been deceived in the result of his observations. Most people are of opinion that the elevation exceeds considerably the 7,760 feet at which he has rated it, and they justify this belief in the following manner. On leaving the valley of Mexico there is an immediate descent of 767 feet into the valley of Tula, and this continues to increase as you advance from Arroyo Sarco towards the Băxīŏ, Zĕlāyă being 1,138 feet, and Salamanca 1,707 feet below the level of the Capital. Guănăjūatŏ rises again, and is only 633 feet lower than Mexico; and although from Mărfīl

to Sílão and the Hacienda of Chichimiquillas, there is a considerable descent, the rise afterwards, in passing the mountains of La Tlachiquera, is so great, that the plains of San Juan de los Llanos are supposed to be but little inferior in elevation to those of the Capital itself. They are called by the natives El Espinazo (the back-bone) of the Table-land; and throughout the whole extent of this dreary ridge, which stretches as far north as Saltillo, the stunted vegetation, and the scarcity of water, seem to designate it as one of the most elevated portions of the central plateau. There is a descent, indeed, into the valley of the Jăral, and you afterwards rise but little between that place and San Luis Potosi, or between San Luis and the Canada of Catorce; but the ascent to the town being at least 1,500 feet, the height of the plain would be only 6,200 feet above the level of the Gulf, if that of the Real itself be correctly computed. The question must be decided by a series of barometrical observations, taken both above and below; and I mention it upon this account as worthy of the attention of some future traveller.

Nov. 30.—We visited the Sŏcăbōn of La Purisima, the mines of El Serēno and Dolōres Trompeta, with the Socabon and mine of La Luz.

In order to reach these works you have to descend the North-eastern declivity of the range of mountains upon which the town stands, as far as the Potrero, a spacious platform, so little elevated above the level of the surrounding plains, that it is acces-

sible to wheel-carriages. On the first discovery of the mines it was intended to build the town upon this spot, and many regret that the resolution was not adhered to; for water, which the Potrero wants, might have been easily conveyed to it by an aqueduct, while provisions and other necessaries would then have reached Catorce in carts, without the expence or risk with which their conveyance up the Cañada is at present attended. It is supposed that the Viceroy, Count Revilla Gigedo, was misled by the representations of some individuals, whose habitations were already built upon the present site of the town, to which a preference was consequently given for the construction of the Government Offices, and these determined the position of the rest.

It is difficult to conceive any thing bolder than the idea of the Sŏcăbōn, (adit,) of La Purisima, or more magnificent than its execution. In order to understand its object, it is necessary to have an idea of the position of the Veta Madre, which, as already stated, occupies the whole side of the mountain above the town, running in a direction nearly due North-east and South-west, and varying in width from three, to thirty, and in some parts, even forty varas. Upon this vein are situated a large proportion of the mines, from which the great wealth of Catorce has proceeded. The uppermost, La Purisima, is followed in regular succession as you descend towards the town, by the mines of Valenciana, San José, Guadalupe de Veta Grande, La

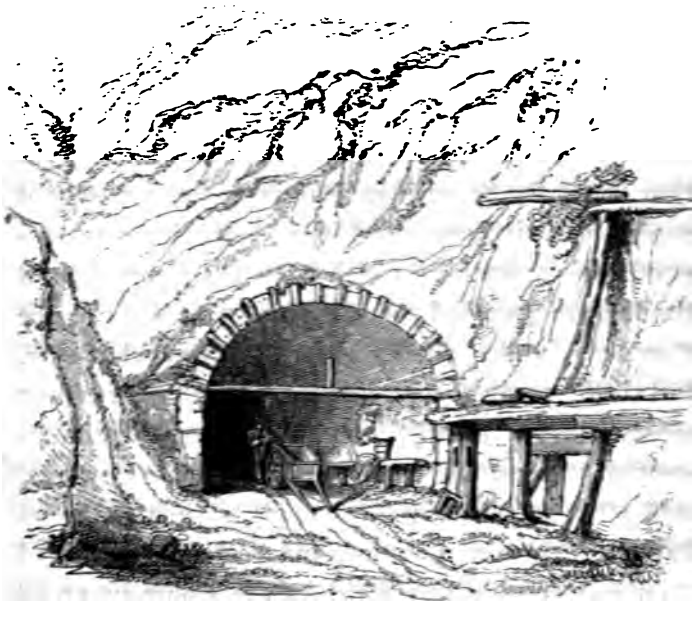
Concepcion, Guădălŭpītŏ, La Estrella, Zacarias, and Dŏlōrĕs Mĕdĕlliñ, all celebrated for their riches, and all, from the unskilful manner in which they were worked at first, encumbered with water in the lower levels, which it is extremely difficult to extract from above, although the riches of the vein are known to have been undiminished at the time when the workings were suspended. Amongst the mines thus abandoned by the original proprietors, is Dolores Medellīn, which was in Bonanza in the lower levels when given up. To drain it and the neighbouring mine of Zacarias, a new shaft called El Tiro del Compromiso, was sunk by a Company of Natives, at an expence of 170,000 dollars; but the enterprise was abandoned when the shaft had reached the depth of 280 varas from the surface, it being discovered that three malacates would not be sufficient to clear the mines of water. Such, however, was the opinion entertained of their value, that it was resolved to effect the object by bringing an adit, or *galerie d'écoulement*, from the level of the Potrēro, which, after passing through the whole of the mountain traversed by the Veta Madre, (called by the natives Barriga de Plata, from the immense quantity of that metal which it has produced,) would cut the vein about eight yards west of the shaft of El Compromiso, at the depth of 277 varas from the surface, and just 2,000 varas from the mouth of the Socabon. The Company formed for this purpose consisted of the present Governor of the State (El Licenciado

Diaz), Don Xavier Martin (the Diputado de Mineria), and Don Antonio Ŏrtīz, with many others of the most experienced practical miners of the district, each of whom took a share in the undertaking, and contributed his quota towards its expences. The work was commenced in 1817, and in four years 755 varas were driven, at an expence of about fifty dollars per vara for manual labour, without including tools, powder, and other contingent charges. Six and even eight varas were sometimes driven in the week; and in 1818, when the expences were heaviest, a payment of fifty dollars weekly was often required upon each share. In 1821, the reduced state of the district, in consequence of the emigration of all the Spanish capitalists and the unsettled aspect of affairs, compelled the shareholders to suspend their operations, which were not resumed until funds were supplied for the purpose by the Catorce Company, under whose superintendence, however, but little progress was made. Their first resident agent laid out a large sum in buildings for the reception of ores, houses for superintendents of works, and other superfluous improvements, such as throwing a bridge over a ravine, and commencing a road to the Hacienda purchased by the Company at El Cĕdrāl, but seemed to regard the adit, which alone could give value to these works, quite as a secondary undertaking. In twelve months it only advanced forty-five varas; and twelve hundred varas remained to be driven, when the derangement of the affairs of

the Company, in consequence of the failure of the house of Goldschmidt, by which it was supported, put a stop to their operations altogether.

The dimensions of the Socabon, at the mouth, are eight varas high by six wide, but at the distance of six hundred varas, its height is reduced to five and a half varas, and its width to five.

When first seen it has the appearance of a natural cavern.



The sides, where the strata through which the work is carried are soft, are secured by masonry, and it is expected that before it reaches the Veta Madre, it will cut a number of other veins, which

are known to traverse the mountain, any one of which that proves productive will furnish funds for the prosecution of the enterprise, as the extraction of the ore will be effected at once in carts. Should all these veins be cut in "Borrasca," which it is difficult to suppose, the total expence of driving 1,200 varas that remain, is estimated by the gentlemen by whom the work has been hitherto conducted, at 250,000 dollars, including a most liberal allowance for every contingent charge. Ultimate success is regarded as certain; for in the mine of La Purisima, which has been worked to the depth of 550 varas, (or eighty varas below the level of the adit,) the ores of the Veta Madre are found not to diminish in richness, nor the vein itself to decrease in width. Besides, as the drainage of all the mines above the Socabon will be effected by it, according to the mining laws, (the due observance of which is secured by the interest that a number of the most influential natives, who are engaged in the undertaking, will have in enforcing them,) the whole of these mines become tributary to the Company, which receives a share of the ores of all the levels drained by its labours, on the upper part of the vein.

The Tiro of El Compromiso was begun in 1804, and continued till 1807, at an expence of 168,000 dollars. It is now allowed by all to have been an ill-judged work, although the native miners maintain that the quality of the ores of Dolores Medellin was such as to justify almost any expence that could be

incurred in order to reach them. Don José Vărēdă, an old Rēscătădōr, informed me that he had himself reduced ores from it of eight marcs to the arroba.

The Catorce Company has twelve Barras, or a full half share in the adit of La Purisima, without "Alimentos," and the whole outlay is to be repaid out of the first fruits. The stores, tools, &c. required for the work are to be furnished by the Company at the invoice price, with a profit allowed by the Mexican proprietors of twenty-five per cent.

The mines of Sereno and Dolōres Trompeta likewise belong to the Company, and may be regarded as one mine, since the workings communicate underground. They are situated close to the mouth of the adit, upon the vein of Dolores. The vein is narrow, but the ores are rich, and a considerable quantity has been extracted since the mine came into the possession of the Company; there is therefore little doubt as to the repayment of the 36,000 dollars, which, (including 12,000 dollars advanced to the proprietors,) have been laid out upon this "negotiation." It is however not comparable in importance with the great adit, connected, as that undertaking is, with contracts for several of the principal mines upon the Veta Madre, as Guadalupito and Estrella, both of which the Company holds, in addition to those of Zacarias and Dolores Medellin, of which I have already spoken. Respecting these, the most enthusiastic expectations are entertained by the natives, who all conceive that the day

upon which the Socabon of La Purisima strikes the Veta Madre will be the commencement of a new epoch in the annals of Catorce, equal in splendour to that of the discovery of the district in 1773, when an addition of nearly four millions of dollars annually was made to the mining produce of New Spain.

Besides these mines, the Company possesses that of Zăvālă, commonly called "Del Padre Flores," from the name of its first proprietor; the history of which is exceedingly curious, although the expectations of future produce are by no means great.

In 1778, when the fame of the riches of Catorce attracted settlers from every side, the Padre Flores was amongst their number, and, unwilling to remain idle where all were employed in seeking the gifts of fortune, he purchased for 700 dollars a mine recently denounced upon a little vein nearly due north of the town, where he began to work. After following some little "Hilitos," or threads of rich ore, to about twenty varas from the surface, a small Boveda, or vaulted chamber, was discovered, full of a loose metalliferous earth, so completely impregnated with particles of silver, that it was bought up at once by the Rescatadores, at the price of one dollar for the pound weight of ore. Neither powder nor the usual implements of mining were required for the extraction of this earth, which was, in fact, nothing more than extremely rich ores in a state of decomposition. The first Boveda was small, in

comparison with a second, situated about sixty feet lower, and full of the same metalliferous dust, with which the Costales (miners' sacks) were actually filled with the horn Cucharas (spoons) used in making the "Tentadura," (essaying the richness of the ore.) The Bonanza commenced in 1781, and lasted till the middle of 1783, during which period the Padre Flores received for his share of the profits three millions and a half of dollars; and this, (be it recollected,) at a time when, in order to obtain a sufficient number of workmen, the "Partido," or share of the ore raised assigned to the miners, often amounted at Catorce to one-*half* of the produce, and was hardly ever less than one-third. The profits of the Rescatadores, too, are supposed to have been very large, as, notwithstanding the price paid for the carga, (300 dollars,) at the mouth of the shaft, they came even from Leon and Guanajuato to purchase the ores, and afterwards carried them a distance of sixty and eighty leagues to their Haciendas. The total amount of the silver raised during the three years, may therefore be estimated at from six to seven millions of dollars; it being upon record, that sales to the amount of 64,000 dollars were sometimes effected in a day.

The celebrity of the Mine of Zavālá drew adventurers from all quarters to the spot, and the ground about the Pertinencia of the Padre Flores is poached in every direction by shafts sunk in the hope of discovering such another "Bolsa de Dios Padre,"

(" Purse of Our Father above," by which impious name he designated his mine,) as had fallen to his lot. But the boldest measure was that of the Conde del Peñasco, who, having contrived to obtain possession of the papers belonging to the Mine of Zăvālă, (deposited in the Mining Deputation of the district,) removed in one night the " Mofaneros," or landmarks, which serve to distinguish the different " Pertinencias," sunk a little shaft close to Zăvālă, and drove a cross-cut from it directly into the Padre's treasure-chamber, from which he carried off a very large sum (in ores) before his operations could be stopped by the intervention of the tribunals. Indeed, as the title-deeds had been secreted, it is difficult to say how the affair would have been brought to a decision, had not ecclesiastical censures been resorted to, which in that age were still all powerful. The Conde was compelled, by a sentence of excommunication, to give up the stolen papers, and to ask pardon on his knees of the Padre for the fraud practised upon him. This the Padre not only granted, but cancelled, at the same time, the debt which the Count had incurred by the extraction of ores in so unwarrantable a manner.

This story could hardly be deemed worthy of credit, were it not confirmed at the present day by several contemporaries of the Bonanza, as well as by the evidence of written documents which I have seen. I have likewise visited the two Bovedas, in the second of which the mouth of the cross-cut

driven by the Count's orders is still distinctly visible.

The most peculiar circumstance in the Bonanza of Zavāla is the total absence of a vein, not a vestige of which is to be seen either in the mine, or any where in its vicinity, with the exception of the little Veta de San Francisco, which is just visible at the mouth of a socabon begun by the Company at the foot of the hill upon which the mine is situated. This socabon is intended to explore the mountain immediately below the great Boveda, at the depth of about 150 varas. It must be 340 varas in length; and the expence is estimated at 60,000 dollars. But although it might not be imprudent to risk this sum, in order to investigate satisfactorily a spot productive of such immense riches, the terms of the contract are so unfavourable as to render any idea of working the mine entirely out of the question; the Company having only *ten* Barras, for which they were to pay 20,000 dollars as "Alimentos," to be repaid, together with all other expences, out of one half of the produce, the other half going to the Mexican proprietors. These onerous conditions determined Mr. Stokes, the present director of the Catorce Company, to give up the undertaking at once, and Zavāla is abandoned, probably for ever.

From Dolores Trompeta we proceeded along the Potrero to the mine of El Refugio, or La Luz, (it is known by both names,) denounced in 1804 by the Licenciado Gordoa. During the two first years

he was nearly ruined, the mine having required a very considerable outlay, and produced no profits; but, in 1806, a Bonanza commenced, which can hardly yet be said to have terminated. In the course of it, Gordoa has acquired a fortune of one million of dollars, and the estate of Mal Passo, near Zacatecas, for which he paid 700,000 dollars more. In 1815 and 1816, the extraction of the ores of La Luz became extremely difficult, in consequence of the great depth of the lower levels; but the present Governor of the State, who was at that time residing at Catorce, and acting as Gordoa's representative, undertook to apply to it a socabon, originally projected for the mine of La Purisima, the levels of which it would enter at about 412 varas from the surface. The measures for this socabon, the mouth of which, (like that of La Purisima,) is situated in the Potrero, were taken by two native miners, Don José Maria Varēda, and Don Antonio Ŏrtīz, and the work commenced after the rainy season of 1817. On the 25th of April, 1822, the vein was cut 715 varas from the mouth of the socabon. A communication was immediately effected with the old workings above, which were drained by this new channel, while a shaft was sunk in order to explore the vein below, which, when I saw it, was 150 varas in depth: the ore is raised by a malacate, erected in a large excavation made for the purpose in the side of the socabon.

This noble work is six varas broad and five high.

An aqueduct runs down one side for carrying off the water from the shaft, while the ores are brought to the "despacho," or receiving-room, in carts. The ventilation is excellent, and we were much struck with the order and regularity apparent in every part of the establishment, in which from four to six hundred men are employed daily. The mine, at the end of 1826, was not "de buenas," that is, was not producing good ores; and it was even supposed that there would be a deficit of from three to four thousand dollars upon the year; but Don Xavier Martin informed me that, as Rescatador, he had frequently purchased ores there at the rate of 300 dollars per carga, (of 300 lbs.) and that he once, from eleven pounds of ore, from a particular working called El Ojo de San Pedro, obtained nine marcs and six ounces of silver: the ore was what is called "metal azue," (blue metal,) the value of which he happened to be the first to discover. In 1825, the weekly sales of La Luz frequently amounted to 20,000 dollars. My desire to be acquainted with its proprietor was much diminished by learning that for fourteen years he had not seen his mine, never having had the curiosity even to visit the beautiful works that have been executed there by his agents. Passing from one extreme to the other, he now dreads incurring the slightest expence that the mine itself will not cover; and the administrador informed me, that should another six months elapse without

profits, the whole establishment would probably be broken up.

The socabon has been continued about 100 varas in the direction of the Purisima, beyond the point where the vein of La Luz was cut; but the work is now suspended. Five hundred varas more are required in order to reach the Veta Madre, the whole distance being calculated at 1,300 varas, of which 814 are already driven. The other great adit (that of La Purisima) is 700 varas longer, and consequently will be attended with more expence; but it has the advantage of intersecting the Veta Madre at a much lower point, and of thus rendering tributary several mines in lieu of one.

Dec. 1.—We visited La Purisima, and Concepcion, Guadalupe de Veta Grande, and the other mines upon the mother vein.

The two first belong to the family of the Obregones; and the brothers, Don Lorenzo and Don Isadoro Obregon, reside at Catorce, in order to superintend the works. The Purisima was discovered in 1780 by some wood-cutters, who denounced the spot, in consequence of having found some lumps of silver attached to the roots of a tree there, but sold their title for 300 dollars to Don José Antonio Dāvălŏs, who again made over a half share in the mine to the father of the Obrĕgōnĕs, on condition that he should be at the expence of sinking a shaft, of which the mine was in want. The first great

Bŏnānză began in 1787, and continued for more than twenty years, in which time the mine was sunk to its present depth, 536 varas. It has now three shafts, one below the other; and this increases the difficulties of the drainage so much, that many are of opinion that it can only be effected by the adit of La Luz, which, as already stated, would enter the lower levels at the depth of 412 varas. The mine, however, is still kept "Amparada" by the present proprietors; that is to say, men enough are employed upon it, from time to time, to preserve a legal right of possession; and in a good week, ores to the amount of four or five hundred dollars are occasionally raised.

The Concepcion belonged originally to Don Bernade Cĕpēdă, who sold the mine in borrasca to the Ăgūirrĕs, with whom Obrĕgōn made a contract similar to that concluded with Davalos for the Purisima. In 1798, a Bonanza commenced, that only terminated with the Revolution.

During the war, the mine was neglected, and became gradually full of water; in consequence of which, a contract was concluded with the house of Gordon and Murphy for a steam-engine, by which it was hoped that the drainage might be speedily effected.

This engine, the first of the kind transmitted to Mexico, was sent out, in 1821, by a special permission from the Spanish Government, and landed at Tampico in May 1822. Its conveyance from this place into the interior was entrusted principally

to Mr. Robert Phillips, whom I found in charge of the machinery at the time of my visit. Of the hardships endured, and the perseverance and activity displayed by him in the execution of this task, I can give no better idea than by publishing an account of his journey, as drawn up by himself, which will be found in the Appendix, (Letter A.) The engine did not reach Catorce until the 11th November, 1822; the caravan having found it necessary to proceed as far North as Monterey, in order to reach the Puerto de los Muertos, the only spot north of Jălāpă at which it is possible for a wheel-carriage to ascend from the coast to the Table-land. They afterwards proceeded by Saltillo to Catorce, and deposited the boilers, and all the larger pieces of machinery at the Potrero, from whence they were drawn up to the summit of the mountain by means of pulleys, and a six-inch rope, an operation which it required four whole days to effect.

Unfortunately a fatal error had been committed in not sending out iron-pipes for the pumps. Wood was not to be procured at Catorce, and was brought at a vast expence from La Huasteca, (the *Tierra Caliente* below;) but when bored, the timber proved unable to sustain the weight of the column of water, raised from the depth of 300 varas; and, after a great loss of time, Mr. Phillips was sent to Cincinnati, (on the Missisippi,) where he succeeded in procuring cast-iron pipes. With these he returned to Catorce, in September 1825, and on the 1st of June, 1826,

the engine again began to work. In November, the mine was almost entirely drained; but the working was not carried on with activity on account of the want of funds.

It is hardly to be expected that the Aviadores, or "Habilitators," will ever derive much advantage from the speculation, as they have no confidential agent upon the spot, and have not attempted to interfere personally in the management. All the absurd charges established in the infancy of Catorce in order to attract workmen, have been renewed at Concepcion. Besides a "Partido," varying from one-half to one-fourth, (the quantity diminishing as the ores increase in value,) the "Cuchara," or share, of the Administrador swallows up one-tenth of the whole *produce* of the mine, whether the ores raised prove sufficient to cover the weekly expences or not. This lucrative situation is held by a Mr. Medina, whom the Habilitators selected as their confidential agent; and who, after making over one-third of his profits to Don Isidoro Obregon, as an inducement to undertake the whole management of the concern, lives in comfort and idleness upon the remainder at San Luis Potosi. His profits during the year 1825, when the mine *lost*, are said to have been 20,000 dollars. The produce of 1825 was, however, considerable; a *clavo rico* having been discovered in the upper levels, overlooked in former times, which produced, when worked, 80,000 dollars. Out of this the castings for the steam-engine, and a part of the

money advanced upon the mine by Mr. Dollar, were paid.

It is through this gentleman, whose contracts were made over to the Anglo-Mexican Association, that that Company now holds a share in the Concepcion. They have likewise made some trifling advances upon the mine themselves, one moiety of which has been already repaid. Of the goodness of the mine there is as little doubt as of the power of the engine to drain it, if it be regularly worked; but the system at present pursued is so bad, and the misunderstandings between the "Aviadores" and the proprietors so frequent, that but little is to be expected from the undertaking. Seventeen and a half per cent. (including the share of the administrador, a tax of five per cent. called capilla, and another of two and a half per cent. in favour of a doctor who does not exist,) are now deducted from the produce, and distributed amongst those more immediately connected with the mine: the remainder barely covers the "memorias," or weekly expences; and while this plan is adhered to, there is little difficulty in predicting the result.

Besides the share in Concepcion, the Anglo-Mexican Company holds at Catorce contracts for the mines of Guadalupe de Veta Grande and Milagros. Both of these are regarded as undertakings of great promise; but the terms upon which the Company has undertaken to work them are so onerous that it is absolutely impossible that the drainage should

proceed until the contracts are cancelled, and more equitable conditions substituted for them. In Guadalupe, for instance, the "Habilitadores" have only six barras, or *one-fourth*, for which they paid at once 20,000 dollars as "alimentos," and bound themselves to lay out 160,000 dollars upon the mine. Should this prove insufficient, for every additional sum of 20,000 dollars advanced by them, they are to receive an additional barra until they have acquired nine barras, which number they are not to exceed. The Company would therefore pay 180,000 dollars in all, for something more than one-third of the mine; and this, in a district where the possibility of obtaining more favourable terms has been so clearly demonstrated by the contracts concluded by Mr. Crawford, on the part of the Catorce Company, with the Governor and Don Xavier Martin, for the socabon of La Purisima, and the mines upon the Veta Madre connected with it; in all of which the "aviadores" are allowed a full half, without "alimentos" or advances of any kind, except those required for the prosecution of the work itself.

In Milagros the works had been suspended in consequence of a law-suit with the proprietor.

The Veta Descubridora of Catorce was worked as early as 1773: it is situated to the N.N.W. of the town, and has never produced a single good mine; nor were the riches concealed in its vicinity suspected until 1778, when a free black, by name Milagros, a wandering musician, returning across

the Sierra late in the evening from Mătĕhūală, where he had been employed at some village fête, lost his horse, and being forced, in consequence, to pass the night in the mountains, lighted a large fire upon the spot where the shaft of Milagros was afterwards sunk. In the morning he discovered a cake of silver amongst the embers, upon which he immediately denounced the vein, and is said to have drawn from it, within ten yards of the surface, ores producing sixty marcs of silver to the carga.

But before this denunciation, which first attracted the attention of the public, Don Bernabé Cĕpēdă was working the mine of Gŭadălūpĕ on the Veta Madre, in the midst then of impenetrable forests, and sending silver to Mătĕhūală, and other places, to be reduced, without any one knowing from whence it proceeded. The good fortune of Mĭlāgrŏs soon covered the barren rocks with inhabitants. Shafts were sunk upon the Veta Madre in rapid succession, the most important of which I have already enumerated; and other veins were discovered, some intersecting the great mother-vein, as that of La Luz, and others perfectly distinct from it, as those of Zavala, Dolores Trompeta, and San Ramon.

The principal mines upon the vein of La Luz were San Geronimo and Santa Ana, which belonged to Captain Zuñiga, of whose will I have already made mention. He bequeathed four millions of dollars for charitable institutions, reserving a fund for working his mines, which appears to have been swallowed up,

together with all other judicial deposits, during the Revolution. The great Bonanzas of his mines began in 1787 and 1789.

The mine of San Rămōn belonged, together with the mines of Dolores and Serreno, to Don Jorge Parodi, a Genoese, and produced, in 1787, a Bonanza of two millions of dollars. The richness of the ores may be inferred from the fact, that those of the mine of Serreno, which yield five and six marcs of Silver per carga, were regarded as unworthy of attention, and the workings not extended beyond their present depth of one hundred and thirty-seven varas: while the vein of San Ramon was explored in all its ramifications with the greatest care.

Zuniga, on his arrival at Catorce, was merely a muleteer, who visited the mountains with supplies for the newly discovered district; meat and every other necessary being then paid for almost *à peso de plata*, (by their weight in silver.) Encouraged by the examples of sudden riches which he saw around him, he sold his mules, and purchased with the proceeds (about 2,000 dollars) the two mines from which he afterwards derived such enormous wealth. They were at that time "catas," that is, new denunciations, without a shaft, or any other requisite; but the ores were rich at the very surface, and the Rescatadores, who flocked to Catorce from the neighbouring districts, enabled him to convert the produce at once into dollars, and thus to prosecute his works with great activity. His title of captain he bought in his more prosperous

days; indeed, it appears that, from his munificence, he almost bought the Viceroy himself; for on the great Besamanos days in Mexico, he used to appear at court with a pocket-handkerchief full of gold toys, and tell Branciforte, (at that time Viceroy,) as he passed him almost without a salute, and proceeded to the private apartments of the Vicequeen, "I don't come to see your Excellency; *Soy un barbaro, y no sé nada de Cortes,* (I am a barbarian, and know nothing of courts,) *vengo à ver a mi niña,* (I come to see my little girl,)" the Viceroy's daughter, on whom the contents of the handkerchief were of course bestowed.

Most of those who made fortunes at Catorce, were men like Zuñiga, of little education, and no resources. Parodi, Don Pedro Medellin, (the proprietor of the mine of Dolores,) and twenty others, whose names it would be useless to enumerate, were all "*barbaros;*" and the extravagance of their expenditure was such as might have been expected from the facility with which their wealth was acquired. Medellin, upon one occasion, spent six-and-thirty thousand dollars upon an entertainment given in honour of a godchild at Saltillo; and at the time when the Partido amounted to one-third of the ores raised, common miners have been known to lose two and three thousand dollars in a morning at a cock-fight. Fortunately, there were some exceptions, and though the descendants of the more prudent adventurers, who invested in land a part of their profits, have

all quitted the vicinity of Catorce, and purchased property in more fertile districts, their estates still bear evidence to the richness of the mineral deposits from which they proceeded. The Bavillés purchased large Haciendas near Aguas Calientes. The Obregones at Leon. The Aguirres established themselves at Mitchuala, and are proprietors of the great Hacienda of Venegas. The Padre Flores acquired large estates in Zacatecas. The Licenciado Gordoa, (proprietor of La Luz,) has done the same: and in addition to these a number of small fortunes were made, varying from sixty to one hundred thousand dollars, by Spaniards, all of whom have removed to Europe since 1810, with their capitals.

The present produce of the district, in which there was not, in December 1826, a single mine in Bonanza, varies from fifty to seventy bars of Silver monthly.* There being no mint at San Luis, the greatest part of these bars are transmitted to Zacatecas, and coined in the mint there; but many are sent direct to Refugio, at the mouth of the river Bravo, where they are exchanged for contraband goods from New Orleans and the Havana, with which Catorce is better supplied than any other place in the Federation. Almost every house in the town is a shop, and you may find in them French and Spanish wines, Virginia and Havana tobacco, Catalan paper in abundance, (all articles most strictly

* By official returns in my possession, it appears, from January to November, (1826,) 7856 Bars had been sent to San Luis.

prohibited,) with European linens, cottons, and hardware, mantas, and even furniture from the United States, which are introduced through Refugio, where the duties are never very burthensome, even in cases where their payment is not entirely evaded. The goods are landed upon the coast by small American schooners, and afterwards conveyed into the Interior by a sort of mixed breed of French, Spaniards, and Italians, who are perfectly acquainted with the country and the wants of the different towns, and time their remittances accordingly. Several of these adventurers were pointed out to me, who came to Catorce, at first, with a board of images upon their heads, but now rank amongst the most respectable *merchants* of the place. Throughout Mexico, indeed I believe in every part of Spanish America, they are ignorant of the distinction made in Europe between the wholesale and the retail trade. There is nothing at all inconsistent with their ideas of propriety in keeping a shop: a "tienda" is, on the contrary, attached to every Hacienda, and the proprietor regards the profit on the sale of the goods, with which it is his business to keep it supplied, as a part of his yearly income. This was always done, too, in remote parts of the country in great mining "negotiations;" and thus the wages of the miners being naturally exchanged at the shop for the supplies of which they might be in want, a small capital was sufficient to keep up the circulating medium required, the whole of the weekly issues returning almost immediately into the

hands of the proprietors. In some instances, where dollars were scarce, checks upon the shops were given for the amount due to each labourer, and thus a sort of paper circulation created, which was seldom objected to where the credit of the adventurers was tolerably well established.

At Catorce, the Governor of San Luis has two shops, from which he derives a very considerable addition to his income; but his principal profits consist in the trade in "bars" of silver, which, as it is now organized, affords to any capitalist a very profitable investment, unaccompanied by any risk.

The silver is bought up from the poorer miners and rescatadores, who are anxious to convert it into ready money as speedily as possible, at seven dollars and six reals the marc. At San Luis the mint price is eight dollars and two reals. The "Bar" contains 136 marcs, which, at four reals profit upon each, leave 540 reals, or sixty-seven dollars and a half, to the purchaser, out of which must be deducted two dollars for the carriage of the "bar" to San Luis, and two dollars more for commission and agency there and at Catorce. The net profit is therefore sixty-three dollars and a half on each bar, and in an establishment where thirty and forty bars are negotiated monthly, the amount at the end of the year is very considerable.

I have given these details upon a subject, which to many of my readers may appear unimportant, in order to exemplify the possibility of silver being

sold in the more remote districts, at four and four and a half dollars the marc during the Revolution, although the mint price was never less than eight dollars, and two or four reals. It will be seen that there is nothing improbable in the fact, since in time of peace, and within fifty leagues of the capital of a mining state, the sacrifice of four reals upon the marc is still made, in order to obtain immediate supplies in dollars. As the produce of the country increases, these supplies will become more abundant, and the profits of the capitalist diminish in proportion; but much time will probably elapse before the present rate of discount* can materially decrease.

Of the great Haciendas, or amalgamation works of Catorce I can say nothing, as I was prevented from visiting them by the distance, and the extreme badness of the roads. I was informed, however, that those belonging to the Catorce Company, the Governor, and the principal rescatadores, at El Cĕdral, Vănēgăs, and Mătĕhūălă, are all upon the model of those of Guanajuato, and, in general, extremely well conducted. The spots selected for most of them abound, (comparatively at least,) in wood, water, and forage, the extreme dearness of which in the Real itself sufficiently accounts for the

* I hardly know whether the term of "discount" can be properly applied to the operation which I have just described. European bankers, however, would probably be glad to be able to effect their discounts upon so substantial a substitute for paper.

state of wretchedness to which all similar establishments there are reduced. An arroba of common Zacate, (dry grass,) costs at Catorce from one and a half to three reals. Maize rises during moments of scarcity to eight and ten dollars the fanega. The ordinary price is from two to three dollars, and even at this the expence of maintaining the number of mules required for a large establishment of tahonas, or arrastres, where water-power cannot be applied, would be enormous. It is on this account that every possible mode of shortening the process of amalgamation has been resorted to by the rescatadores of Catorce, who have introduced a mode of treating the poorer ores, called El beneficio de Cazo, which is but little known in other districts. The ores are prepared for this process by washing, upon an inclined plane, (La Planilla,) which is in fact a bad substitute for the concentrating machine, mentioned in the preceding book. When separated, as much as possible, from the earthy particles, they are placed in a large cauldron, with a copper bottom, called El Cazo, below which a fire is kept up. The metalliferous earth is then diluted with water, until it becomes quite of a thin consistency, when salt is added, (p^{a}. limpiar, castrar,) and quicksilver in the usual proportion; this is not, however, thrown in until the fluid has been in a boiling state for at least two hours. The whole is kept in motion by a man provided with a rake, (rastrillo,) and in six hours the incorporation of the quicksilver with a portion

of the silver is generally found to have taken place. The water is then drawn off, and the residue (called polvillos) submitted to the ordinary process in the Patio, not more than one-half of the silver being extracted in the Cazo. The same process is sometimes carried on upon a larger scale, the Cazo being made to resemble an arrastre in shape, with a fire beneath, while the contents are kept in constant motion by two large blocks of wood, attached (like the blocks of granite in the arrastre) to a revolving cross beam, worked by a mule. This system is termed "Beneficio del fondon," a caballo, and is infinitely more productive than that of the simple Cazo; as, from the weight of the blocks, there is no deposit, and the action of the mercury upon the ores is much promoted. If the boiling be continued sixteen hours in lieu of eight, there seldom remains anything for the patio; but as the process is attended with more expence, it is seldom resorted to.

We remained at Catorce five whole days, being constantly induced to defer our departure by the number of objects that unexpectedly claimed our attention. During this interval I visited all the mines described in the preceding pages, nor can I sufficiently express my obligations to their proprietors for the readiness with which they answered my innumerable inquiries, and supplied me with every information that it was in their power to convey. They all seemed most anxious that the resources of their district should be made known to Europe, for

[illegible] to future prosperity as intimately connected with that of the Company, in which they hope in vain the Mexican Republic will in future abandon and they imagine not without some reason, that the recent discouragement of European Capitalists has proceeded more from a doubt as to the permanency powers of the country than from any other cause.

I have seldom witnessed more hospitality or a more friendly feeling towards foreigners than was evinced at Catorce. Nor was this a display elicited by any visit, for I was assured by the agents of both the companies that they had uniformly met with the most kind and liberal treatment and that the good understanding which prevailed in 1826, had not upon any occasion been interrupted. With respect to ourselves, nothing could exceed the politeness with which we were treated. On the 3rd of December, the day before our departure, we dined with a very large party at the Obregones, whose table might certainly have induced a belief that the Conception was in Bonanza, for a more magnificent display of dishes I have seldom seen, and many of them were brought from a distance of fifty and sixty leagues. In the evening we went to a ball, at which all the belles of the place were assembled. We found the same scarcity of gloves and corsets amongst the ladies, as at Guañajūatŏ, but sugars were countless; and though the old Mexican shaksaw dress of 1823, (scarlet and yellow,

with pink or green shoes,) prevailed in all its purity, the brilliancy of the colours was rendered less intolerable by the clouds of white smoke in which the wearers were enveloped. The utmost good-humour however prevailed, as soon as the apprehensions of "etiqueta rigurosa," which the presence of so formidable a person as Mrs. Ward at first occasioned, had a little subsided: a Padre Dominicano had the goodness to play us some national airs upon a harpsichord, which had penetrated into these elevated regions; and a valse figurée was danced with the guitar, (played alternately by the lady and gentleman while dancing,) which, if not particularly decent, was at least singular, and executed with great precision.

On the following morning we took leave of our numerous friends, to many of whom I was indebted for some very valuable additions to my mineralogical collection, and descended, accompanied by a number of the most respectable inhabitants of the town to the Cañada, where our coach was already loaded, and only awaiting our arrival, in order to commence its route towards Sŏmbrĕrētĕ, which was the next place of importance on our road towards the North.

The descent from Catorce is much more formidable than the approach to the town from below. Yet so familiarised had we become with rocks and precipices, that Mrs. Ward did not think of dismounting, but rode down to the Cañada without apprehension.

She had indeed served a pretty good apprenticeship during her residence in the place, for the road to the two Socabones of La Purisima and La Luz, to both of which she accompanied me, is infinitely worse than that to the Cañada; and even the ascent to the Veta Madre, which she visited two or three times, in order to get a good drawing of the town from the Tiro del Compromiso, is not without danger.*

* This drawing will be engraved separately, together with views of Sōmbrĕrētĕ, Zacatecas, Tlalpujahua, Valladolid, and Guanajuato, should my present undertaking have the effect of awakening public curiosity with regard to Mexico sufficiently to encourage me to proceed.

SECTION III.

JOURNEY FROM CATORCE TO SOMBRERETE. MINES OF THAT DISTRICT.

ON quitting the Cañada of Catorce (Dec. 4), we began to pass what we all termed the Desert, or, in other words, a plain, extending, without any other variety than the occasional undulations of the surface, from the mountains of Cătōrcé to those of Zăcătēcăs, a distance of about seventy leagues. The whole of this space is covered with a sort of mimosa, with very long thorns; another smaller shrub, the name of which I do not know, but which resembles the box in the shape and colour of its leaf; mezquites, and dwarf palms, bearing a fruit not unlike the real date in appearance, and by no means unpalatable. Water there is none, except in vast "tanques," or reservoirs, kept up at a considerable expence, as it is upon them that the proprietors rely for the preservation of the enormous flocks of sheep and goats which are bred upon their estates.

Not a field of maize or a trace of cultivation is to be seen; and the country, like the Steppes of the Crimea, seems only intended to be inhabited by a nomade race.

Having been furnished with a route, in which the Rancho of San Francisco was put down as our first night's lodging, and the distance stated to be only ten leagues from Catorce, we left the Cañada late, and proceeded until four in the afternoon, when we discovered, to our great dismay, the ruins of two Indian huts, to which the name of San Francisco may formerly have been given, but which we found to contain neither water nor maize, nor any symptoms of having been inhabited for many years. We were accordingly compelled to push on to El Bŏzāl, another Rancho about six leagues farther on, where we did not arrive until eight o'clock, having lost a good deal of time at San Francisco in an attempt to lasso some of our loose mules for the carriage; an operation which, in the open plain, was, as usual, attended with considerable difficulty. At the Bŏzāl we found four families residing in as many wretched hovels, the best of which was given up by the inhabitants to Mrs. Ward and the children, while Mr. Martin and I put up our beds in a hut, that usually served as a kitchen, and which, in order to give free egress to the smoke, was open both at the roof and sides. Dr. Wilson, Mr. Carrington, and Don Rafael, slept in the open air, within the fence of dwarf palms that surrounded Mrs. Ward's habitation.

Under ordinary circumstances, such a bivouac would have been no more than what we were all prepared to expect, but I had unfortunately been attacked at Catorce by a violent rheumatism in the left shoulder, which gave me excruciating pain towards morning, when a Norther came sweeping over the plain, shaking to its very foundation the frail tenement in which we had taken up our quarters, and carrying away the cloaks and mangas by which we attempted to protect ourselves from its violence. I seldom recollect having suffered more acutely than I did during this storm; and at daybreak, when we began to flatter ourselves with the hope of reaching more comfortable quarters, we found that our chance of being able to proceed at all was exceedingly precarious. As no maize could be procured for the horses and mules on our arrival, they were turned out to make the most of the Zăcātĕ, or long grass with which the plains about the Bŏzāl abounded; and the servants, instead of placing one of the party to watch their motions during the night, abandoned them entirely to their fate, conceiving that they would not wander far from the houses, and the great "tanque" in their vicinity, at which alone water was to be procured. The consequence was, as might have been foreseen, that in the morning not a single animal was to be found; and although a few of the most quietly disposed were discovered at no great distance, and secured, yet even with their assistance it took the servants the whole of the early

part of the day to hunt down a portion of the remainder, whose tracks they followed across the endless plain until they were themselves quite bewildered amongst the rows of dwarf palms, and could only return to the Bŏzāl by retracing their steps. With the assistance of some Rancheros from the Hacienda of Sierra Hermosa, to which the Bŏzāl belongs, the search was renewed, and towards evening all our stud was brought in, with the exception of eight of the carriage-mules, which, being bred in Durango, appeared to have taken a northerly direction by themselves. As there was nothing to stop them between the Bŏzāl and the United States, pursuit seemed useless, and we gave them up for lost, after begging the Rancheros, should any stragglers be discovered amongst their own herds, to send them after us to Siērră Hĕrmōsă, where we resolved to stop one day for the chance of their coming up. The wind continued with undiminished violence during the twenty-four hours that we passed at the Bŏzāl; it did not, however, cause us much inconvenience, as we all took refuge during the day in Mrs. Ward's apartment, which was not only nearly air-tight, but curiously adorned with household furniture, some cocks and hens, and a fine collection of religious plates.

Provisions would have been scarce, however, had not the flocks of the Conde del Jărāl, upon whose estates we again were, come down most opportunely to water at the "tanque." With much difficulty

we prevailed upon the shepherds to let us have a sheep, which was very expeditiously disposed of by the hungry servants. The men would not take money for their charge, but required a written receipt, which we gave them, and they then left us to settle our accoumt with the "Administrador" of Sierră Hĕrmōsă, who, as usual, refused to receive any thing. Don Rafael, and El Niño,* (by which name young Carrington was always designated amongst the Mexicans,) added a number of ducks, which they shot upon the reservoir, to our mutton broth; and as we had brought some bread with us from Catorce, we fared sumptuously, although disappointed in our hopes of getting any of the deer which the servants had seen in herds of fifty and sixty while in pursuit of the horses. I was prevented from attempting to lift a gun myself, not being able to raise my arm.

Dec. 6.—Finding it impossible to reach the Hacienda in one day, we proceeded to another Rancho, called Săn Ignăcĭŏ, about nine leagues from the Bŏzāl. I was forced to perform this day's journey in the coach, being absolutely unable to mount my

* The "Niño," or the "Niña," are terms of endearment applied by old servants to the youngest member of a family; and Carrington being very young, and very much liked, was soon honoured with the appellation. Latterly they never called him any thing else, except on great occasions, when he was elevated to the dignity of el Secretario chico, (the little Secretary,) in order to distinguish him from the other gentlemen attached to the Mission, of superior standing to himself.

horse; nor do I know how long I might have been deprived of the use of my arm, had I not discovered an admirable remedy for rheumatism in the Maguey brandy given to us at the Jărāl. I moistened some flannel with this spirit, and had the arm rubbed until excoriation was produced, which had the effect of entirely relieving the pain, and of even removing all stiffness in the course of a few days. We found at Săn Ignāciŏ one good "adobe," (hut,) which was given up to us with great good-humour by the inmates. It only contained a single room; but of this, by the help of the canvass curtain, we made two, which were exactly large enough to contain five mattresses. The rest of the party slept *al fresco*, and most bitterly did they complain of their lot, for a colder night was, I believe, seldom felt. Two of our carriage-mules were brought in at San Ignacio, by a Văqūerŏ, but of the other six we could obtain no tidings; indeed, they were never heard of more. In order to prevent such serious losses in future, all the animals were confined in a corral, where they were supplied with maize, and bundles of dried grass, which we all worked hard to collect. In the morning, notwithstanding our precautions, Mr. Martin's horse, with Dr. Wilson's, and one of mine, dashed off on to the plain, with their saddles, bridles, and other accoutrements. They were closely pursued by some of the Rancheros with their lassos, but these men not being well mounted could not overtake them, and the whole group were soon out of sight.

After waiting three hours for their return, we were forced to leave them to their fate, and to commence our journey towards Siĕrră Hĕrmōsă, from which we were still distant sixteen leagues. Mrs. Ward and I left San Ignacio about eleven o'clock, after breakfasting upon some eggs and maize cakes, and overtook the carriage, which had preceded us, about sunset, when within sight of the Hacienda, having kept our horses at a rapid passo all the way. Nothing could be more monotonous than the road, upon which we only passed one Rancho, (the estacion of San José,) and one great reservoir of water, (the tanque de la Mancha,) without a habitation near it, but which was nevertheless put down as a night's lodging for us by our Catorce friends. The country reminded us not a little of Scriptural times, when a man was immortalized who sank a well, and distances were calculated by the time requisite in order to reach the different watering-places. We saw abundance of hares and rabbits, and from time to time, a flock of goats, or a long line of sheep, forming so white a streak at a distance, that they might almost have been mistaken for water. A few horses and mules, and, now and then, some cows, afforded a little occasional variety. All these had Vaqueros in attendance, some of whom passed us in full chase, with their lassos whirling above their heads, and their horses galloping over ground so poached by the tulsas and rabbits, that a person unaccustomed to the service would think it impossible to cross it in

safety, even with the greatest precautions. In the rear of the flocks, the Coyotes, or Mexican jackall, might be discovered prowling in considerable numbers; and at a little distance from San Ignacio we met a band of Rancheros, returning in high glee from the tanque of Juan Perez, where, they informed us, they had been lassoing some wolves which had committed great devastations, and driven the cattle from the water. Every thing, in short, was characteristic of a state of things in which civilization had made but little progress: the natives possessed both the honesty and the hospitality of a primitive race; for our horses were brought back to us on the evening of our arrival at Sierra Hermosa, with even the holster-pistols untouched, notwithstanding the eagerness with which European fire-arms are always eyed in America; and at the Hacienda we met with a most friendly reception from the Administrador and his family, who insisted upon giving up to us all the best apartments in the house.

The estate of Siĕrrā Hĕrmōsă consists of two hundred and sixty-two Sitios: the lands extend from Cătōrcĕ, (to the East,) and Măzăpīl, (to the North,) to a little beyond the Hacienda in the direction of Zăcătēcăs, (about forty-five leagues.) The stock consists principally of "ganado menor," sheep, and some goats. Of the first, the Conde himself has 200,000, which produce annually from 25 to 30,000 yearlings for the Mexican market. The goats are sent to the Căsă dĕ Mătānzā (slaughter-house) of the Jărāl.

Those killed at the Siērră are upon the account of the Administrador, for all the principal "dependientes" upon the Count's estates receive a very small salary, in lieu of which they are allowed to keep a certain quantity of live stock upon the land. Many of the Rancheros, who have only four or five dollars a month in money, possess as many as a thousand goats, with an "atajo" of eighty or a hundred horses. The Administrador during our stay was killing one hundred goats every day; and he informed me that his mătānză, (or killing season,) usually lasted a month. The hides and tallow are disposed of for his exclusive benefit, and the profits are sufficiently large to afford him a very comfortable maintenance.

A supply of maize, for the consumption of the estate, is grown about the Hacienda, and there is likewise a great annual shearing, which produces between four and five thousand arrobas of wool.

We passed the whole of the 8th of December at Siērră Hĕrmōsă, in the vain hope of hearing something of our lost mules, and proceeded on the 9th to the Hacienda del Mézquīté, which derives its name from the thorny shrub that forms the only apology for vegetation upon the road. The distance is seventeen leagues, but with the exception of Cāñăs, an estacion de Gănādŏ Măyōr, (literally a station for cattle,) with a large Noria, and some trees, which, with a plot of fresh-looking grass in the immediate vicinity of the water, form an agreeable

break in the dreariness of the surrounding country, we did not meet with a living creature upon the way. Nothing can convey more thoroughly the feeling of desolation than the solitude of so extensive a district, and we were all rejoiced when, after nine hours' travelling, we at last discovered the Hacienda, which is not visible until you are within a league of the house, as it is situated in a hollow, a little below the general level of the plain.

The Mĕsquītĕ is one of the fourteen Haciendas of which the Conde de Pĕrĕz Gālvĕz is proprietor. Some of these are situated in the Baxio, (about Silao;) another, (Gŭanămē,) lies near El Vĕnādŏ; and in the neighbourhood of the Mezqūite there are three, (Las Nōrĭăs, Bĕrgēl, and La Sălādă,) all bordering upon one another, and placed under the orders of the same superintendent (administrador,) who resides at El Mezqūite, where the căsă de mătānză is also established.

The four Haciendas contain 200 Sitios, upon which there are about 150,000 goats and sheep. The mătānză of 1826 consisted of 29,000 fat goats, bred upon the lands of Bĕrgēl and Lăs Nōriăs, and killed at the rate of two hundred every twenty-four hours: the tallow (cebo) made from their fat was sent to Mexico; the skins to Guadalajara, where they sold upon an average for six reals each.

The house at El Mĕzqūitĕ is large, and well furnished, having occasionally been visited by the proprietors. A tienda (or shop) is attached to it.

The water of the Noria is abundant; but there is not a tree near the Hacienda, nor any thing like vegetation, with the exception of some maize-fields, upon which a few fanegas of Indian corn are grown. Upon the whole, I can hardly conceive a more melancholy residence, for the air is filled at night with the dismal howlings of the Cŏyōtĕs, who are attracted by the offal from the casa de matanza, and who absolutely swarm in all the thickets around, although from two to three hundred are destroyed every year in the *battues*, for which the Rancheros assemble periodically, in order to keep down the breed.

Dec. 10.—From the Mezquite it was our intention to proceed to Rancho Grande, where we were to enter the great Northern road, between Frĕsnīllŏ and Sōmbrĕrētĕ, but the administrador recommended us so strongly to pass the night at the Hacienda of Lă Sălādă, which he described as well worth visiting, and but little out of the road, that we were induced to change our plans, and to turn the heads of our horses in that direction.

The first view of the Hacienda is exceedingly curious, as it is situated upon the borders of a lake of tĕqŭesqūitĕ, or carbonate of Soda, which, from its brilliant whiteness, is visible at a great distance. This extensive deposit of mineral salt forms one of the most valuable possessions of the Pĕrĕz Gālvĕz family in the North; for tĕqŭesqūite being a necessary ingredient in smelting, it is bought up in

very large quantities by the miners of Dŭrāngŏ, Sōmbrĕrētĕ, Zácátecás, and Guănájūātó, to whom it is sold at four reals the fanega, or one dollar the mule load, upon the spot. In a good year the lake yields 30,000 cargas, or 360,000 arrobas, (of 25 lbs. each,) and the produce is then worth between forty and fifty thousand dollars; as the price paid for the carga by soap-makers, and other manufacturers, from San Luis and Guadalajara, is always double the mining price, and, when the demand is great, rises to three, and even four dollars. But the quantity of tĕqŭesqūité collected varies with the year, and depends almost entirely upon the rainy season. If too little rain falls, the "costre," or saline incrustation, which is the most valuable part of the crop, does not form, and nothing but "polvillos," (dust,) of a very inferior quality, is collected. If, on the other hand, the rains continue too long, the earth has not time to dry before the middle of April, which is the season for collecting the tĕqŭesqūité, and the whole is lost. In 1826, the stock upon hand was very small, and the prospects for the ensuing year discouraging; it not having rained when we passed, on the 11th of December, since the 25th of the preceding July. In a favourable season, the "costre" varies from one to four fingers in thickness, and is of sufficient solidity to allow the workmen to walk upon it without giving way. The depth of water beneath is very inconsiderable. The stock of tequesquite is laid up for sale in large conical hillocks,

carefully covered with earth. The formation of these hillocks at the proper season is the only expence with which the disposal of the crop is attended, for the purchasers come with their mules to the Hacienda, and load them by the water-side. The produce of the lake might undoubtedly be increased, and rendered more regular at the same time, by irrigation, which would not be attended with any difficulty, even in the driest seasons, as there is a supply of fresh water close at hand, which might easily be directed into the hollow where the carbonate of Soda is produced. But the Count, who is of the old school, maintains that this would be to force Providence, and under this impression he will not allow nature to be even assisted in her operations.

The Hacienda of La Salada contains only two Sitios in land; the house is newly built and very pretty. There is a spring of beautifully clear water behind it, with some trees, the first, almost, that we had seen since leaving the Jărāl.

Dec. 11.—We commenced our journey early, and stopped to breakfast at Rānchŏ Grāndĕ, a large village situated upon the banks of a stream, which rises in the mountains of Frĕsnīllŏ, and runs N.N.E. towards Parras, and from thence to the Gulf.

At the Rancho we procured excellent bread, (the first that we had tasted for three days,) and milk in abundanee. From thence to Ătŏtŏnīlcŏ, a Hacienda belonging to the Dominican Friars, the distance is eleven leagues, the last five of which, through

Bărrāncă Hōndă to the mésōn, are exceedingly steep and rugged. In one of the worst parts of the road we were reconnoitred by six men on horseback, the only suspicious characters that we fell in with upon our whole journey, who, after observing us for some time from the top of a hill that overlooked the road, moved off at a very rapid pace on our advancing towards them in our turn. They probably thought the party too formidable to be attacked, for we were both more numerous and better armed than themselves.

Our accommodations at Ätŏtŏnīlcŏ were of the very worst kind, the house being half in ruins, and the dirtiness of the rooms quite indescribable. For our supper I had fortunately provided by shooting three or four hares, and ten quails of a remarkably large kind, upon the way. They are a very delicate bird, and are found in great abundance on the road from the Mezquite to Sōmbrĕrētĕ, and from thence again to Guădălăjārä. As they run for a considerable distance after each flight, and are easily lost amongst the bushes, I found that the best mode of shooting them was to make a servant follow the covey on horseback after I had fired, and keep his eye upon them until I could reload and ride up to him again. In this way I could, at any time, procure as many as we wanted, for they fly straight, and are a very easy shot. Between Ätŏtŏnīlcŏ and La Sălādă we saw proofs both of the abundance of cŏyōtĕs, and of the facility with which they may

be secured with the lasso. Thirteen of these animals were hunted down on a plain by the road-side, by a few Rancheros assembled for the purpose, and very speedily suspended to two trees. To fix the lasso but little dexterity is required, as the cŏyōte is pursued by the horsemen until he is nearly exhausted, when the noose is dropped over his head, by one of the party, while another alights and despatches him with the măchēte. Where the ground is open, he has hardly a chance of escape; but in the neighbourhood of a Bărrāncă, the struggle for life is maintained with great energy, and even when the fatal noose has been affixed, I have seen the lasso itself divided by the teeth of the animal, before the cord could be stretched in such a manner as to terminate his resistance. While the chace lasts, the horses display astonishing agility both in their rapid turns, and in the dexterity with which they avoid the nopals, and Mezquite trees, amongst which the cŏyōte usually seeks protection; but I should much doubt whether, if the animal were to stretch directly across the plain, they would be able to overtake him, unless in the morning, when gorged with food; which is indeed the hour usually selected for the purpose. In the evening I have often attempted to ride them down myself, but never succeeded, except in one instance, in approaching sufficiently near to try a shot with a pistol. This may, however, have been owing a little to my dislike of the tŭlsāles, which often prevented me from keeping my horse at full speed.

Dec. 12.—From Ătŏtŏnīlcŏ to Sōmbrĕrētĕ, thirteen or fourteen leagues.

There is little worthy of remark upon the road. We breakfasted at el Ărĕnāl, a Rancho; upon leaving which we had an immediate view of the mountain of el Sōmbrĕrĕtīllo (seven leagues distant), at the foot of which the town of Sōmbrĕrētĕ stands. The name is derived from an excrescence upon the summit of the mountain, not unlike a hat in appearance, and visible at a great distance.

About four leagues from the town we were met by Don Nărcīsŏ Ănītŭă, the proprietor of the mines worked by the United Mexican Company in the district of Sōmbrĕrētĕ, and conducted by him to his own house; where we remained during our whole stay, which was prolonged till the 17th of December, in order to allow time for a full examination of the mines.

These are situated upon the two great veins of La Veta Negra and El Păvĕllōn, the existence of which forms a very remarkable feature in the district of Sombrerete; as, though perfectly distinct, they run parallel with each other in the same direction (S.E. and N.W.) at a distance of only 190 varas at the surface, which diminishes in the lower workings, (from the inclination of the lodes towards each other,) until, at the depth of about 780 varas, it is supposed that the two may blend into one.

Upon each of these veins there is a series of shafts, which were originally separate mines. Those upon

the Veta Negra were afterwards connected with each other, in the lower levels, by what is termed the "Cañon General," a gallery which traverses the whole of the workings and conveys the water to the western extremity of the vein (the Tiro de San Pedro), where the horse-whims for the drainage are to be erected.

From the shaft of San Pedro to that of Săn Lūcăs, the works upon the Veta Negra comprise a space of 800 varas; the whole of which, when I saw the mines, had been cleared, drained, and retimbered to the depth of 280 varas, since the 3d of December 1825. Works of great extent had been likewise executed in order to give the mines a proper ventilation, (the abundance of arsenical pyrites in the lower levels rendering great precautions necessary,) and a communication had been established throughout the whole by means of the cañon general.

On the vein of El Păvĕllōn, the great shafts of La Cruz and San José, (the first of which is three hundred and ten varas in depth,) had been, in like manner, repaired, and six malacates erected at each for the prosecution of the drainage.

In order to form a just conception of the character of the enterprise in which the Company is engaged, some knowledge of the previous history of the mines is requisite.

Both the Vĕtă Nēgră and the Păvĕllōn were known during the early part of the seventeenth century. Of the first little is known; but the Păvĕllōn in 1670, was worked by a company com-

posed of three individuals, Don Frăncisco Cŏstilla, Don Matīas Carrasquilla, and Don José de la Peña Duran, and produced, in the year 1675, a bonanza, which is said, by a contemporary author, to have yielded, for five years, 20,000 dollars a-day.*

This statement is probably exaggerated, but the amount of silver raised must have been very considerable, as the church of San Juan Bautista, at Sombrerete, is known to have been built out of the profits of one barra, (that is, one share out of twenty-four,) set apart for the purpose by Costilla, one of the three proprietors, in the year 1679.

In 1681 a Real Caja, or Royal Treasury, was established in the district, by the registers of which it appears, that in the next ten years, although the riches of the Pavellon are said to have decreased materially during that time, the sums paid as the King's fifth, upon the whole produce of the district, were 1,406,468 marcs, and six ounces of silver, or about twelve millions of dollars.

The causes which led to the abandonment of the mines from which these enormous riches proceeded, are not now known; it is supposed, however, that lawsuits first induced the owners to suspend their operations, and that the accumulation of water, which took place during the interval, rendered it impossible to resume them in those early ages, when the powers of machinery were so little known. Be this

* *Vide* the Cronica of Zacatecas, 1736.

as it may, the Pavellon was given up in 1696 or 1698, and the Veta Negra appears to have shared the same fate about the same time.

For nearly one hundred years Sombrerete was almost deserted; but in 1780 the mines were again taken up by the Făgŏāgă family, which was destined to derive from them, a few years later, such unexampled wealth. The story is curious, and ought to be known.

It appears that Don José Mariano Făgŏāgă, one of the brothers, who was at that time engaged in some mining speculations at Fresnillo, visited Sombrerete, accompanied by his secretary Tarve, who was induced, by the information which he acquired there respecting the Veta Negra, to persuade his master to risk 16,000 dollars upon an attempt to work this vein, of which he (Tarve) undertook the direction, with a promise of one-fourth of the profits as his recompense, in case of success.

Without any pretensions to science, Tarve possessed activity enough to make an excellent director, while the under-ground management was entrusted to Don Manuel Unzain, reputed to be one of the best miners of the day. Fortune smiled upon their exertions. The mines became productive almost immediately, and a bŏnānză ensued, of which Tarve's fourth amounted, in 1786, to 360,000 dollars. The whole bonanza therefore, taking the "partido" at the most moderate estimate, (one-eighth,) must have been 1,620,000 dollars.

In 1767, Tarve, having acquired a sufficient capital, and an intimate knowledge of the mining capabilities of the district, resolved to commence operations upon his own account, and to attack the vein of the Pavellon. With this view he set out for Mexico, in order to close his accounts with the Company, and to give up the management of the Veta Negra, which he had conducted with so much success. He was taken ill upon the road, and died at Zacatecas, but not before he had bequeathed his confidential mining "dependiente," Don Juan Martin de Izmendi, as a precious legacy to his old patrons, and with him a knowledge of his projects with regard to the Pavellon.

In these Izmendi was supported by Don José Mariano Fagoaga; but the family being reduced by various misfortunes, and the mines of Veta Negra failing almost entirely at the same time, it was with the utmost difficulty that he obtained the means of carrying his plans into execution; and he only effected it at last, by disregarding the positive and repeated orders which he received to give up the work.

Tarve's favourite scheme was to drive a level from the Veta Negra in such a direction as to strike the vein of the Pavellon (which runs through much higher ground), a little below the spot where the bonanza of the preceding century had ceased, conceiving it probable that, in a vein which had produced such extraordinary riches above, the dete-

rioration that had taken place afterwards, would only be temporary, and that the ores would resume their original quality below.

This work Izmendi executed, by driving the Crucero (cross cut) of San Rafael, which led to the second great bonanza of the Pavellon, and rendered the Marquis of Apartado and his brothers the wealthiest individuals of their day in Mexico, or perhaps in the world. It is a curious fact, and one that serves to illustrate the vicissitudes inseparable from mining adventures, that had this crucero been executed with the same precision as the rest of Izmendi's works; that is, had it preserved its original level, and struck the vein of the Pavellon one single yard lower than it did, it would have cut the vein in "*borrasca*," that is, in a part where it presented no indications of rich ores; in which case, the enterprise would have been instantly abandoned, Izmendi, and his patron Don José Mariano Fagoaga, denounced as rash and imprudent adventurers, and the district itself forsaken, as one from which nothing more was to be hoped. As it happened, the level of San Rafael, by rising one vara higher than it ought to have done, according to the measurements, struck almost the lowest stone of a "clavo," or natural deposit of rich ores, which, although it did not extend above sixty varas in depth, or thirty-five in length upon the course of the vein, produced a bonanza of eleven millions and a half of dollars, adding one-eighth as partido to the value of the

4771 bars of silver registered at the Royal Provincial treasury. The ores were raised in about eight months, at different intervals, but their reduction lasted from the year 1792 until 1811, during the whole of which period the Fagoagas enjoyed an exemption from duties, granted them before the extent of their good fortune in the mine of the Pavellon was suspected, in consideration of their former losses.

Much time elapsed in the first instance before any advantage could be derived from Innendi's successful labours; for, from the moment that the communication between the two veins was opened by the crucero of San Rafael, the water which had accumulated during a whole century in the old workings of the Pavellon, rushed down into the Veta Negra, where it became necessary to draw it off in order to render the new discoveries accessible. The shaft of La Cruz was afterwards sunk directly upon the cross cut, between the two veins, and through this a great part of the bonanza was raised. Another shaft, called San José, was subsequently added, and a Hacienda built in the centre of the town, with a magnificence well worthy of the ores for the reduction of which it was intended. The Patio, or court of amalgamation, is surrounded by eighty-four arches, under each of which an arrastre, or crushing mill, is placed; and in addition to these, there are fourteen large furnaces for smelting, with store-rooms for ores, stampers, and apartments without number for workmen, guards, and superintendents, all enclosed

by a lofty wall. The whole is now going to decay, but it is still a splendid monument of the former opulence of the mines, and as such cannot be visited without interest.

The vein of the Pavellon has always been more remarkable for the richness, than the abundance of its ores: during the great bonanza, thirty-five marcs of silver were often yielded by one quintal of ore, and twelve or fifteen marcs per carga was the ordinary produce of metals classed as "Comunes." Mr. Anitua himself has, more recently, reduced ores from a little branch of the vein, in the shaft of El Carmen, which contained forty-five marcs to the carga. One hundred cargas yielded twenty-one bars of silver, or 21,000 dollars; but the vein was small, and soon lost itself in the mountain.

The Făgŏāgăs having entirely abandoned their mines, they remained unworked from 1812 to 1819, when an association of native miners was formed to denounce them anew, at the head of which was Don Narcisco Ănītŭă, the present proprietor. The necessary funds were raised, and the drainage nearly effected, when the declaration of Independence in 1821 threw the country into an unsettled state. The labourers all quitted the mines to join Ĭtŭrbīdĕ's armies; and Anitua, whose whole fortune was embarked in the enterprise, saw himself compelled to abandon it at the very moment when his labours seemed drawing towards their close. For three years all his operations were suspended; but at the expira-

tion of that time, having concluded a contract with the United Company, and ceded to them, as "Aviadores," or Habilitators, one half of the negotiation, he obtained the necessary funds for carrying on the undertaking, and on the 3d of December, 1825, the drainage recommenced. A difference of opinion prevailed, for some time, between the proprietor and the Company, with regard to the best mode of effecting this; Mr. Alaman being desirous to confine his operations to the vein of the Pavellon, while Mr. Anitua maintained the impossibility of ever entirely clearing that vein of water without attacking the Veta Negra at the same time.

From the difference in point of elevation between the two veins, the waters of the Păvĕllōn flow, at first, into the Veta Negra, but, as the extreme depth of the levels of the Păvĕllōn is much greater than that of the lowest workings upon the Veta Negra, the waters, upon rising in the last to the level of the Crŭcērŏ of San Răfăēl, flow back again into the Păvĕllōn; and although they might be restrained for a time by building a wall across the Crucero, (as was formerly attempted,) still the danger with which such an accumulation of water would be accompanied, in the event of the present attempt to explore the vein of the Pavellon to a still greater depth proving successful, induced the Company to resolve upon comprehending the Veta Negra in their enterprise, as the only means of ensuring the safety of those engaged in it.

In the time of the Făgŏāgăs, thirty malacates (horse-whims) were employed upon the two veins, but under Mr. Anitua's superintendence a much smaller number had proved sufficient; twelve malacates having been erected at the shafts of La Cruz and José, upon the vein of the Pavellon (six at each shaft), and twelve more at the shafts of Gŭadălūpĕ and San Antōnĭŏ upon the Vĕtă Nēgră; by which, as already stated, the mines in one year have been entirely cleared of water.

The object of the Company is to examine the Cerro (or hill) which the vein of the Pavellon traverses, at a point immediately below those from which the two great bonanzas of 1675 and 1792 were raised, in the hope of finding a third "clavo rico," or "bunch" of rich ores, which it seems to be the character of the vein to produce after an interval of barrenness. For this purpose the shaft of La Cruz is to be carried down a hundred varas below its present depth, and cross cuts driven from it, at intervals, in such a direction as to explore the whole course of the vein in the parts where it has hitherto been unworked. The expence incurred is fully warranted by the importance of the object, and by the certainty that if any portion of the vein be found productive, such is the richness of the ores, that a very small quantity will be sufficient to repay the whole outlay; while should a third great mineral deposit be discovered, instances of which have not unfrequently occurred in other mines, (as Răyăs, La Qŭe-

brădīllă, and Bărrāncŏ, mentioned in the preceding sections,) the profits of the Adventurers would be enormous.

In order to complete their trial of the capabilities of Sōmbrĕrētĕ as a mining district, the Company has commenced a new shaft, called La Concordia, "denounced" by the brother of Don Narcisco Anitua, upon a part of the vein never before explored. This shaft is situated to the North-west of all the old workings, a little beyond an arroyo, or ravine, in which the crest of the vein is distinctly visible, and from its size appears to announce a lode of no common dimensions.

In December 1826, the workings were 112 varas in depth. At 120 varas, a first level was to be driven in the direction of the vein, which it will cut at the distance of thirty-seven varas, if the inclination be the same below, as in the shaft of La Cruz. The necessary buildings at Concordia were all complete, and excellent of their kind; and should fortune favour the enterprise, not a moment would be lost in turning the produce to account. It is regarded by professional men as one of the most interesting experiments that has yet been tried in Mexico, and, whatever be the result, it deserves to be repaid with success.

A similar attempt to explore an untried portion of the Veta Negra has been made, by sinking the new shaft of San Lucas, in which the vein had been cut a short time before my visit to Sombrerēte; the

first six cargas of ore raised, which I saw smelted, produced fifty-nine and a half marcs; and, in the opinion of Mr. Keating, a very able mineralogist from the United States, who had examined the mine a few weeks before, appearances were such as to warrant the most sanguine expectations with regard to the result.

I have not heard whether these expectations have been since realized, but I can bear evidence to the zeal, and ability, with which their attainment was sought. It is difficult to possess a more perfect acquaintance than Mr. Anitua with all the local peculiarities of his ground, or to imagine a better system than that which he has introduced into every part of his establishment. The drainage, which has been effected entirely by Mexican machinery, was conducted with unprecedented activity, and concluded in half the time allotted for it in the opinion of the other miners of the district. The malacates used are smaller and lighter than those of Guănăjuātŏ; the drum of the largest being only six varas in diameter, and the "palanca," or cross beam, to which the horses are attached, eighteen varas in length. But the difference in point of size is compensated by the rapidity with which they are worked, the horses being kept constantly at a very rapid trot, and changed every two hours. Should the vein of El Păvĕllōn assume a favourable appearance in the new workings, now that the mines are cleared, a general system of drainage will be established for

the whole negotiation, by concentrating the water from both veins at the shaft of San Pedro, which will be sunk for the purpose to the depth of 500 varas. This will be sufficient to carry the deepest part of the shaft below the lowest levels of the Pavellon, while, from the vicinity of the two lodes, and the manner in which the water already passes from one to the other in the deeper workings, a cross-cut, (or sangria,) will be all that is necessary in order to ensure a regular communication. The whole drainage will, in this case, not require more than eight mălăcātĕs, for which, should the present experiment lead to more permanent works, a steam-winding, or pumping-engine, may be substituted.

The outlay of the Company at Sōmbrĕrētĕ, in 1826, amounted to nearly 500,000 dollars. With this, the whole of the mines mentioned in the preceding pages had been cleared of water, and retimbered where necessary; three new shafts sunk, (La Concordia, San Luis, and El Carmen, which last was intended merely for the extraction of rubbish from the old workings of the Pavellon;) two Haciendas de Beneficio put into complete repair; and so large a stock laid in of maize, wood, horses, and every other necessary, that it was thought that during the whole ensuing year but few additions would be required. In every department, Mr. Anitua's exertions appeared to have been indefatigable; and as, from his long experience in mines, he looked into every thing himself, and understood every thing

into which he looked, there was no inattention or negligence amongst the subordinate agents, but all the parts were made to work well together. Upon the whole, I did not see in Mexico a better-regulated enterprise; and there are very few the management of which is so entirely free from defects.

In the two Haciendas of the Company, La Purisima and La Soledad, amalgamation is but little employed. The ores are usually smelted, and in this process great use is made of the tĕquĕsquītĕ, (carbonate of soda,) from La Sălādă, which is employed as a dissolvent. The lead ore (or Grētă) used, is brought from Măpĭmī, or Cuēncămē, (on the frontiers of Dŭrāngŏ and Chĭhuāhŭa;) the charcoal from the Mĕzqŭitāl, or the Mĕzqūitĕ woods belonging to the Hacienda of Mŭlērŏs, on the road to Durango. The charcoal costs one dollar for the carga of ten arrobas, or 250 lbs.; the lead varies from eight to twelve dollars per carga, about one arroba, or 25lbs. of which is lost in the reduction of a carga of ore.

Mr. Anitua, who manages the whole smelting department himself, and is thought to understand the process better than any man in the district, informed me that the average expences may be estimated at fifty-six dollars to the monton of twenty quintals; they consequently exceed considerably the charge for reducing a similar quantity of ore by amalgamation; but it is a favourite theory in all the smelting districts, that the ores yield a greater proportion of

silver in the "horno" (furnace), than in the patio (amalgamation court), and the difference, in Mr. Attitus's opinion, is more than sufficient to cover the additional expence. The question has never yet been fairly brought to an issue, as, in the different districts, the choice of the process was usually determined, in the first instance, by the greater or less facility with which the ingredients required in each could be procured. Very rich ores are, however, always smelted: and as those of the Pàvellòn are remarkable for the quantity of silver which they contain, this circumstance is perhaps sufficient to account for the general preference now given in Sōnhorete to reduction by fire, although in the neighbouring districts of Zacatēcas and Guanajuato, it is very little in use.

SECTION IV.

JOURNEY FROM SOMBRERETE TO DURANGO.—ACCOUNT OF THAT STATE.—MINES OF GUARISAMEY, AND THE SIERRA MADRE IN GENERAL. — EASTERN FRONTIER, TEXAS. — STATES OF SONORA AND CINALOA.—GULF OF CALAFORNIA.—MAZATLAN AND GUAYMAS. —MINES OF ARISPE, ALAMOS, MULATOS, AND COSALA.—GENERAL OBSERVATIONS UPON THE NORTH OF MEXICO.

It was our intention, on leaving Mexico, to have extended our journey North as far as Durango, but so much time had been consumed by the first part of our tour, and so much was still requisite for the return by Zacatecas, Guadalajāra, and Vālladolid, that both Mr. Martin and I thought it inexpedient to prolong our absence from the Capital by adhering to our original plan. With the coach, a visit to Dŭrāngŏ from Sombrerete, and the return, would have occupied nine days; the road being bad, and the dis-

three-thirty or thirty-five leagues, and thus was a sacrifice of time which, as there were no French or English establishments to visit, we did not conceive ourselves justified in making. It was therefore determined that the party should take at once the road to the South, by Zacatecas, from whence we were to branch off, through Aguas Calientes, to the Western States.

My anxiety to visit Durango was, however, too great to allow me to be satisfied with this arrangement. My curiosity had been much excited with regard to the Northern Provinces, by the praises lavished upon them by General Victoria, who is a native of Tamaulipas, (called, in commemoration of his birth, Villa Feliz de Tamaulipas,) upon the frontiers of the two States of Durango and Sonora; and I was determined to reach at least the threshhold of this forbidden ground, into which so few foreigners have hitherto penetrated, and from which all who have done so have brought back such favourable reports. I therefore consulted Mr. Anitua upon the subject, and, finding that I might ride post to Durango in one day, and after passing eight-and-forty hours there, by returning in the same manner, still reach Zacatecas as soon as the rest of my party, I resolved to undertake the journey. Mr. Anitua provided me with horses, relays of which he stationed at the different Haciendas upon the way, and gave me a guide well acquainted with the bridle-roads, by whom alone I was accompanied.

I left Hombrerete a little before seven, on the

morning of the 16th December, and being admirably mounted, I reached the Hacienda del Călăbăzāl, (my first stage,) at half-past eight.

The State of Zacatecas terminates with the ridge of hills immediately above the valley of the Calabazal; the bajada, (descent,) which is very precipitous, and covered with fragments of rock, is almost impassable for carriages, and even on horseback, occasions considerable delay. Below, a plain commences, which extends, with little interruption, as far as Mŭlērŏs, (seven leagues,) one of the most valuable Haciendas in the State of Durango. Its "Estancias" (stations) for breeding cattle are very extensive, and it possesses upon the banks of a river never entirely dry,* tierras de labor, which, from the command of water, might be rendered extremely productive. The "Ranchos de Mescal" alone are let for fifteen and twenty thousand dollars per annum; and from the Mezquite woods belonging to the estate, the town of Sombrerete is supplied almost entirely with fuel. But the system of management is bad; the breed of horses and mules, for which the Hacienda was once famous, has been allowed to go

* Englishmen will probably be amused at this being pointed out as a remarkable quality in a river; but those of Mexico are even more uncertain than the rivers of Spain, and there, I recollect, that on the morning when the present Queen entered Madrid, an order was issued for watering the bed of the Manzanares, lest Her Majesty should be incommoded by the dust.

to decay; and not half the quantity of grain is raised that might be produced.

The wood, or "Monte" of Muleros, consists exclusively of three species of trees, called Tăscātĕ, Guĭsāchĕ, and Mĕzquītĕ, the last of which grows there to a size such as I had not before seen.

I left the Calabazal twenty minutes before nine, and reached Graseros, (an Estancia, or Rancho, belonging to Muleros,) at a quarter-past ten.

From thence to the Hacienda of San Qŭintīn, the stage is long, and the latter part very fatiguing. For some leagues the road runs through a continuation of the Mezquite forest, which commences near Mŭlērŏs, but traverses the lands of several other Haciendas. In this the country is level, and the road good; but about three leagues from San Quintin our progress was interrupted by an immense mass of volcanic remains, forming an elevated ridge or bank, and stretching across the plain towards the North-east, with arms or branches extending in every direction. Towards the West, it terminates abruptly in a mass of black vesicular lava, overgrown with cactus and mezquite, and totally unconnected with the sandy soil around. Indeed it was curious to observe how completely each little patch or accumulation of lava stood isolated in the plain, following the course of the principal bank, but looking as if it had just dropped from the clouds into its present situation.

After threading our way with difficulty through

this volcanic labyrinth, where we were forced to check our horses every hundred yards, we at last came in sight of the Hacienda, the situation of which is very pleasing. It is surrounded by trees, the poplar, the willow, and the beech, and possesses a supply of water sufficient for the irrigation of an extensive tract of land. The rivers in the North are in general bordered by two lines of cypresses, (Sabinos,) which, from the red tinge of their foliage during the winter months, are visible at a considerable distance. The trees, however, are not so lofty as those of the South, nor do they ever attain the dimensions of the cypresses in the valley of the Missisippi, to the East, where the heat and moisture combined seem to be particularly favourable to their growth. In the very midst of the bank of lava, to the South of San Quintin, I passed a barranca (ravine) composed of rocks, apparently of quite a different formation, full of these cypresses, with a beautiful stream running through it, and a waterfall, the very sound of which, after my hot ride, was delightful. Immediately around the Hacienda there are enclosures filled with cattle, and vast fields both of maize and wheat, to all appearance admirably cultivated. I was sorry to observe, however, the same wretched hovels serving as abodes for the tenantry, which had struck us, by creating so unpleasing an impression, in the vicinity of the Jărāl, and other great Haciendas.

I did not reach San Quintin till past one o'clock.

From thence to Chăchămōlĭ, where I arrived at half-past two, we found the same difficulty in advancing, on account of several ramifications of the great bank of lava. The Hacienda is situated near a river, the course of which, designated by a double line of Sabinos, we had traced for a long time winding along the foot of the hills which surround the valley. It is the same stream that traverses the plain of Durango, and runs from thence, by the Villa del Nombre de Dios, and the Mĕzquĭtāl, towards the rivers of Jălĭscŏ, with one of which it is supposed to incorporate itself, and to continue its course towards the Pacific.

In one hour after leaving Chăchămōlĭ I reached the Rancho del Ărĕnāl, where my last relay of horses was stationed. From thence to Durango the road is excellent. It runs almost uninterruptedly across a level plain, which, if supplied with water, would be equal in fertility to the richest portions of the Mexican territory. The corn-lands, (*fields*, from their extent, I cannot call them,) of the Hacienda of Năbăcoўān, close to which you again cross the river on a bridge of stone with high narrow arches, are really beautiful; and, on the opposite side, the maize crops of Santa Ana, and other Haciendas, are equally luxuriant. Năbăcŏyān is supplied with water from a "presa," or dam, constructed at a considerable distance up the river by the former proprietors of the Hacienda, from whence it is conducted

by canals to every part of the estate. The whole establishment for irrigation is said to have cost 100,000 dollars.

The central parts of the valley, (La Vega,) to which water cannot be conveyed, are abandoned to the Meezquite, which extends almost to the gates of the town, in the immediate vicinity of which there is a little cultivation. Durango, or, as it has been more recently entitled, in honour of the President, "La Ciudad de Victoria," (the city of Victoria,) is seen to great advantage from the road. It is situated nearer to the Northern than the Southern extremity of the valley, with a little line of hills in the background, and the famous Iron Mountain, called El Cerro del Mĕrcādŏ, at a little distance from the gates. I arrived in sight of the town at half-past four o'clock, and should have reached it at five, by continuing at the same pace; but I was met two leagues from the gates by the Governor of the State, Don Santiago Văcă y Ŏrtīz, and the military commandant, Don Joaquin Ayestaran, to both of whom I had been furnished with letters of introduction by General Victoria, and in their coach we proceeded slowly, and did not reach the Governor's house till dusk.

Of the hospitality and kindness of this gentleman, whose guest I became for two days, I cannot easily say enough. Gratified by my curiosity respecting the North, of which he is a native, he gave me every

assistance in acquiring information, and introduced me, during my stay, at his own table, to almost every person at all calculated to afford it.

Durango may be considered as the first place in the Mexican territories in which the importance of this most valuable portion of the Republic is duly appreciated. To the inhabitants of the Southern and Central Provinces, every thing north of Zacatecas is a *terra incognita;* and the traveller is surprised, after passing this Ultima Thule of civilization, (well deserving the appellation in as far as its own merits are concerned,) to find an improvement in the manners and character of the inhabitants, for which, from the prejudices of their countrymen, he is perfectly unprepared. Durango, where this change first becomes visible, may be regarded as the key to the whole of the North, which is peopled by the descendants of a race of settlers from the most industrious provinces of Spain, (Biscay, Navarre, and Catalonia,) who have preserved their blood uncontaminated by any cross with the aborigines; and who, with this purity of descent, (of which they are justly proud,) retain most of the primitive habits and feelings of their forefathers. They have much of the loyalty and generous frankness for which the old Spanish character was formerly celebrated; great natural politeness, and considerable activity both of mind and body, with a spirit of enterprise, which, now that the bonds are removed by which it has hitherto been confined, will, in a very few years, give to the North

of Mexico a great and preponderating influence. These characteristics extend, with some local modifications, to the inhabitants of the whole country formerly denominated the Western Internal Provinces (Provincias Internas Occidentales), which now comprise the States of Durango, Chihuahua, and Sonora and Cinaloa (forming one State), with the "Territories" of New Mexico and Californias. In all of these the white population predominates, and the Indians, where any remain (as in Sonora), continue unmixed with their conquerors, residing in towns and villages of their own (as the Mayo tribes), or hovering (like the Apaches and other barbarous nations) around the settled lands, seeking a precarious livelihood by the chace.

South of Chĭhuāhŭa few of the aborigines are to be found, except in the Bŏlsōn de Măpĭmī, which communicates with the Indian hunting-lands in Cŏhăhūila and Texas, tenanted by the Cŏmañchĕs, and other Indios Bravos,* who occupy the whole of the unsettled country between the Rio Bravo del Norte and the frontiers of the United States. In Durango there is hardly a single individual of the copper-coloured race. At the time of the Conquest they all retired North upon the advance of the whites; and although some tribes of more settled habits remained in Sonora and Cinaloa, the great mass of the Indian

* All the tribes which held no communication with the missionaries on the frontier, but maintained an independent existence, were thus designated.

population took refuge in the vicinity of the river Gila, where it still retains possession of a country, which, during three centuries, has remained almost entirely unexplored. Of the lands formerly tenanted by them, distinguished both by their mineral riches, and by the rapidly increasing trade with China and the East Indies, of which the ports of Măzătlān and Guaymas are the seat, I shall endeavour to give some description under their new territorial division, referring my readers for many highly interesting details to a journal with which I have been furnished by a gentleman who has very recently returned from the North of Mexico, and who is almost the only foreigner, with the exception of Lieutenant Hardy, who has hitherto visited the interior of Upper Sonora, or at least resided a sufficient time there to acquire a knowledge of the resources and peculiarities of the country.

I shall commence with Durango, the most southern of the Internal Provinces, and the only one to which my own observations extended, much as I should have rejoiced to give them a wider range.

The capital of the State of Durango, is situated sixty-five leagues to the north-west of Zacatecas. The population of the town is 22,000; that of the State 175,000. Both the city of Victoria and most of the other towns of Durango, (Tămăsūlă, Sĭānŏrĭ, Măpĭmī, San Dimas, Canelas, Cuencame, &c.) take their origin from the mines. Before the discovery of those of Gūarĭsămēy, Victoria was a mere village

(Pueblo Ranchero), which, as late as 1783, contained only 8,000 inhabitants. The great streets, the Plaza Mayor, the theatre, and all the principal public edifices, were built by Zămbrānŏ, who is supposed to have drawn from his mines at San Dimas and Guārĭsămēy, upwards of thirty millions of dollars.

The towns of Villa del Nombre de Dios, San Juan del Rio, and Cinco Señores de Nāzăs, are almost the only cities in the State unconnected with mines. The two first are supported by an extensive trade in vino Mescal, (a sort of brandy, distilled from the Maguey, or American aloe;) the last, by the large cotton plantations, upon the banks of the river Nazas, from which the manufacturers of Saltillo, San Luis, and Zacatecas, draw their supplies. The cotton, according to the slovenly practice of the country, is not picked and cleaned upon the spot, but is brought, when gathered, to Durango, where it is separated from the seeds. It sells there, however, notwithstanding this addition to the freight, for one dollar the arroba, of 25lbs.

Durango has no manufactures. Its riches consist entirely in mines and agricultural produce, which last is so considerable, that the lands already brought into cultivation are supposed to be sufficient for the support of a population five times as large as that of the State now is. The Haciendas, however, are, at present, upon too extensive a scale to be well managed; an evil, for which the Congress, by abolishing entails, hopes to provide a remedy.

Most of the estates of Durango are devoted to breeding horned cattle, mules, and sheep, of which last 150,000 are sent every year to the Mexican market. The Hacienda de la Sarca alone possesses a stock of 200,000 sheep, and 40,000 mules and horses. That of Ramos, (which consists of four hundred sitios,) has 80,000 sheep; that of Gŭātĭmăpe 40,000 oxen and cows. The valley of Pŏānăs, again, (about fifteen leagues East of the capital,) contains nothing but corn-lands. It is watered by a river which runs through the centre of the valley, and on the banks of this river are nine *Haciendas de trigo*, (corn estates,) in immediate succession, which supply the capital with flour, of the very best quality, at from six to eight dollars the fanega.

The natural advantages of Durango are not yet fully turned to account. Sugar might be cultivated to any extent in the valleys of the Sierra Madre, where water abounds, and climate might almost be selected at pleasure; but it is, at present, brought from the valley of Cŭērnăvācă, at a distance of 250 leagues. It sells, of course, at an enormous price, five dollars per arroba, and, in a moment of scarcity, often rises to ten.

Indigo and coffee might likewise be reckoned amongst the natural productions of the soil. They are found wild in the barrancas of the Sierra Madre, but no attention is paid to them.

Iron abounds within a quarter of a league of the

gates of Durango. The Cerro del Mercado is entirely composed of iron ores, of two distinct qualities, (crystallized and magnetic,) but almost equally rich, as they both contain from sixty to seventy-five per cent. of pure iron. The operation of smelting these ores is attended with considerable difficulty. It is not understood in the United States, in England, or Silesia, where ores of from twenty to twenty-five per cent. are those in common use; and an iron-foundery lately set up by two natives of Biscay, (Messrs. Ūrqŭiāgă and Ărĕchēvălă,) upon the banks of the river, twenty leagues from Durango, has failed from the want of a knowledge of the proper mode of treating the ores. The adventurers are likewise cramped in their operations by the smallness of their capital. A Hacienda has been built in a situation where there is both water for machinery, and an abundant supply of timber and charcoal; but as the proprietors do not possess the means of constructing a road for carts, (although, from the nature of the ground, it might be accomplished with a very inconsiderable outlay,) the conveyance of the ores on mules to the reduction works materially diminishes the profits of the speculation. With regard to the difficulty of working them, it might undoubtedly be overcome, as, from the affinity of the iron of El Mercado to that of Danemora, Swedish forgemen would understand the nature of the process at once.

The Constitution of Durango is framed in a very

liberal spirit. The religious Article,* although it declares the Roman Catholic religion to be that of the State, does not exclude the public or private exercise of any other; and there is reason to believe, that it was purposely worded in this manner, in order to facilitate the introduction of a more tolerant system, as soon as the general laws of the Federation should allow of it.

By Article X. great facilities are promised to strangers, who wish to be naturalized in the State.

Article XIII. abolishes entails, and titles of nobility.

Article XVI. prohibits slavery, and declares free, whatever slaves were found in the State, at the period of the publication of the Constitution.

The Congress consists of two Chambers, containing eleven deputies, and seven senators. Their salaries are small, and confined to the actual duration of the sessions. The whole expences of the State do not exceed 100,000 dollars per annum.

The Legislature has passed many good and useful laws, and has seconded by its influence the exertions of the Governor, who appears to have displayed the most laudable activity in every branch of the administration. He has established, principally at his own expence, a printing-press, (never before seen in Durango,) the Mint, the Casa del Apartado,

* Article XI. "The Religion of the State is, and shall ever be, the Roman Catholic, which is that adopted by the Federation."

(in which the process of separating the gold from the silver, in bars containing both, is carried on,) a glass manufactory, a tannery, and the Fabrica de Tabaccos; from all of which the State is beginning to derive great advantages. The police of the town, formerly much neglected, was, in 1826, extremely well organized, and robberies almost unknown; in consequence of a law passed at the suggestion of the Governor, by which the tribunals were directed to conclude the legal proceedings, in every case of robbery, within the term of three days.

The revenues of Durango are the same as those of the other States. The contingent amounts to 75,000 dollars, the whole of which had been punctually paid up to January 1827.

The produce of the Alcavalas, under the Spanish government, (when twelve, instead of six per cent. was exacted,) seldom exceeded 22,000 dollars; but under the new system, it has risen to 80,000, in consequence of the judicious improvements introduced.

Tobacco produced, in the year 1826, only 25,000 dollars, but both in this, and in the other branches of the revenue, a rapid improvement was expected.

Trade was increasing, and the advantages of the present institutions, in this respect, were beginning to be duly appreciated; a large proportion of the supplies required for the consumption of the State being drawn from Cŏsălā and Măzătlān, while the remainder was transmitted from San Luis Potosi, or

Mexico, according to the price borne by European manufactures in those two great depôts.

The territory of Durango is divided into ten "Partidos," or districts,* the names and situations of which are given in the map with as much accuracy as the total want of statistical data will admit of. There is as yet no general survey, or map of the State, in existence; and as the gentleman whom I recommended to the Governor for the purpose, on my return to Mexico, and to whom very liberal terms were offered by the Legislature, was prevented by family circumstances from accepting the engagement, but little has yet been done towards correcting the errors, with which all the returns hitherto published abound.

The State is well supplied with all the necessaries of life. Maize seldom rises above twelve reals the fanega, and is often as low as seven. Flour varies from ten to twelve and fourteen dollars the carga. Fruits and vegetables of all kinds abound, particularly peaches and potatoes, for both of which Durango enjoys a sort of celebrity. Mules are bought in "Partida," (wholesale,) at eighteen dollars each. Horses at eight and nine dollars. A fat ox or cow is sold for twelve dollars; and sheep may be purchased for one dollar, at the season when the great flocks from New Mexico come down, on their way

* 1. Durango. 2. Nombre de Dios. 3. San Juan del Rio. 4. Cinco Señores de Nazas. 5. Cuencame. 6. El Oro. 7. Indeo. 8. Papasquiaro. 9. Tamasula. 10. Guarisamey.

towards the central provinces. In the vicinity of the capital, all the materials for building abound; lime and stone may be procured at a very little distance from the gates; the flint used in the glass manufactory is found at the foot of the Cerro del Mercado; and the best lead from Cuēncămē and Măpĭmī only costs four dollars the quintal. Copper for alloy is brought from Chĭhūāhŭa, and sells for twenty-four dollars the hundred weight; and the iron of the Cerro del Mercado, when worked up, as it has frequently been, upon a small scale, into mining tools, is said to be so hard as not to require the usual process of tipping it with steel.

These advantages will be duly appreciated when Durango becomes, as it will do in a few years, the scene of operations for some great foreign or native association of capitalists, by whose labours the resources of the country will first be fully developed.

The State is rich in mineral deposits, none of which, excepting Guārĭsămēy, and Săn Dīmăs, have been at all extensively worked. There is hardly a single mine exceeding 100 varas in depth; for, in general, the use of even the simplest machinery was unknown in the North; and a malacate, primitive as the invention is, would have excited almost as much astonishment as a steam-engine itself. The mines were worked as long as the water could be raised without inconvenience by two or three "Tenateros," (carriers,) with leathern buckets; and abandoned when the discharge of this duty became too labo-

rious. Most of the principal districts may consequently be regarded as virgin ground, and there are few in which the old shafts might not be again brought into activity with a comparatively small outlay. Nothing can exceed the anxiety felt, and expressed, by the Governor, and the members of the Legislature, as well as by all the principal inhabitants, that this experiment should be tried; and were it to be attempted by a Foreign Company of respectability, it would be sure of receiving the warmest support. In such an event, the iron-mines should not be neglected. If properly managed, they alone would be sufficient to ensure the prosperity of the association; for there is no article for which the demand is greater than iron, and none the supply of which from Europe is attended with such manifold disadvantages. Durango might, in two years, be rendered the depôt of iron for Sombrerete, Zacatecas, Catorce, Batopilas, and all the Mining Districts South of Chĭhuāhŭa; nor would the success of the iron-mines already taken up by the Companies at the Encarnacion interfere with this prospect, as their market would be confined to the Central mining States, beyond which, from the difficulties of communication, their operations could hardly be extended.

Durango contains a mint; and the coinage is considerable, although the machinery is of the very worst kind, being the same that was erected at the commencement of the Revolution. In the Casa del

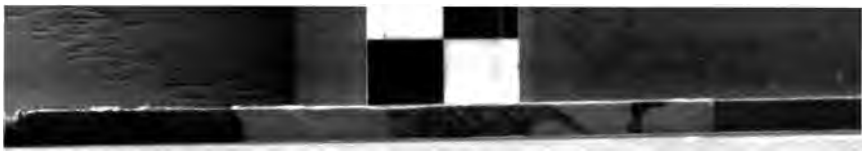
Apartado, the separation of the two metals is effected by the use of nitric acid, and not by sulphuric acid, as in the new establishment formed in Mexico by Mr. Alaman. It is from the mines of Guārĭsămēy that the ores most celebrated for their ley de oro proceed. The proportion of gold is sometimes so large, that a very small "tejo," or cake of silver, which I saw at the Assay Office of the mint, was valued at 2,800 dollars. In the other mining districts of Durango, to the Eastward of the Sierra Madre, there is less gold; and in the lead ores of Măpĭmī and Cuēncămē none. About Tămăsūlă gold is found pure; and it abounds in the whole Western declivity of the Cordillera, where native gold, or gold intermixed in very large proportions with the silver, are the characteristics of most of the principal veins.

A large proportion of the territory of Durango is situated upon the Table-land, and the capital, though surrounded in most maps by mountains, lies in the midst of a vast plain, which, to the North-east, extends, with few interruptions, as far as Chihuahua, and Santa Fé of New Mexico, from whence again there is a farther communication for wheel-carriages to the great rivers in the valley of the Missisippi, and through them, with the Atlantic, by the Eastern Anglo-American States.

To the West, (both North and South,) the Sierra Madre extends, forming a barrier upon the Pacific side; and the hot low lands of Cĭnălōă occupy the

space between the foot of the mountains and the ocean. To the North of Cĭnălōă Sŏnōră commences, and embraces the whole space from the shores of the Gulf of California to the confines of Durango and Chihuahua, upon the Table-land, (between twenty-seven and thirty-four of North latitude,) comprehending in this vast extent of country almost every possible modification of climate, the heat being varied in proportion as the platforms are more or less raised above the level of the sea. A much less degree of elevation is however required in these Northern latitudes to produce that temperate climate, which is found to be most conducive to the fertility of the soil, and the comforts of the inhabitants; and a rise of a few hundred feet is sufficient to give to Arispe, and the districts in its vicinity, the temperature, which the towns within the Tropics only enjoy at a height of from four to seven thousand feet.

The principal mining districts of Durango are those of Gävĭlānĕs, Gūārĭsămēy, and Săn Dīmăs, Tămăsūlă, Cănēlăs, and Sĭānŏrĭ; (all of which are situated towards the Western boundary of the State, upon the descent from the Sierra Madre to the Coast;) with Gūānăsĕvī, Ĭndĕē, El Oro, Cūēncămē, and Măpĭmī, to the Eastward of the Sierra Madre, and differing from those first mentioned, not less in the quality of their ores, (which are poor, but extremely abundant, and intermixed with lead,) than in their elevation above the level of the sea.



Gă'vĭlănĕs, Guārĭsămēy, and San Dimas, lie nearly in the same parallel with the city of Victoria, but about five days' journey to the Westward, three of which are upon the Table-land, while during the remaining two the traveller toils on amidst the fastnesses of the Sierra Madre. The deep and narrow ravines in which Guarisamey is situated, are *Tierra Caliente*, while the mountains that shut them in attain the highest elevation of the Sierra Madre, which Mr. Glennie estimates at 9,000 feet. Gă'vĭlănĕs, on the contrary, stands upon a projecting platform, on the side of one of the mountains, not very far from the summit, and, when seen from a distance, appears more adapted for the abode of eagles, than for that of men. In this last district, the mines are all opened upon one lode, which in dimensions may almost vie with the Veta Madre of Guanajuato. It was discovered by its very elevated crest, which attracted the attention of the "Rumbeadores," (persons who search for metallic lodes,) and was found to produce very rich ores from the surface to the depth of sixty varas, where a kind of black ore was discovered which resisted all attempts to reduce it to advantage. By smelting, it yielded little or nothing, and by amalgamation, although the quantity of silver produced was very considerable, the loss of quicksilver was so great as to leave no profit. On the other hand, the vein, which at the surface was only one vara in width, increased gradually until, at the depth of seventy varas, it was

ten, and in some places more than fifteen varas wide. An adit was driven, with an intention of piercing the lode one hundred varas below the old workings; but from some miscalculation in the measurements, it did not reach the point where it would have cut the vein, and was given up by the proprietors in despair. Since that time Gavilanes has been upon the decline, and, in 1826, the district only contained one mine in activity, although abounding in metalliferous veins.

Guārīsămēy, the head of the surrounding districts, owes its discovery to the lode of Tĕcŏlōtă, which crosses the high road from Dŭrāngŏ to the Coast, by Cŏsălā. The abundance and richness of its ores soon brought settlers into the vicinity of the mines: the neighbouring mountains were explored, and the veins of Ărānă, Cinco Señores, Bŏlāñŏs, Pĭrāmĭdĕ, Cāndĕlārĭa, Dŏlōrĕs, and Tāpĭă, discovered, with numberless others, which have not yet been worked; the miners of Guarisamey having never attacked a vein that did not leave a clear profit from the very surface of the earth.

Almost all the lodes mentioned above were denounced by Zămbrānŏ; and all produced bonānzas, some of which were very considerable. The mine of Arāna was remarkable for containing, between two small stripes of rich ore, a cavity filled (like the bovedas of the mine of Zăvālă, at Catorce) with a rich metalliferous dust, composed almost entirely of gold and silver. It was likewise distinguished by many

of those rich spots commonly called "Clavos," which although of small extent in a horizontal direction, were very constant in perpendicular depth. These "Clavos" were worked to the depth of one hundred and eighty varas, though the mine had no shaft; and during the whole of this space, the most ordinary ores yielded from ten to fifteen marcs to the monton of fifteen quintals, while the richest are said to have produced from seventy to one hundred and five. The lode of Cinco Señores is five varas in width, and the quality of the ores fully equal to their abundance: the mine is three hundred varas in depth, which, even at Guārĭsămēy, is an extraordinary circumstance, few of the oldest mines exceeding one hundred, or one hundred and forty varas. Near the summit of the mountains that separate San Dimas from Guarisamey, lie the mines of Bolaños and Piramide, with others, all of inconsiderable depth. The bonanza of Bolaños, upon its first discovery, was celebrated, but the mine was abandoned in consequence of the failure of an adit commenced with great magnificence, but so badly conducted, that after wandering in various directions in search of the lode, at a very considerable expence, it came out again on the side, at a very little distance from the point where it had entered the mountain.

On the North side of the same ridge lies the famous mine of La Candelaria, from which a very large portion of Zambrano's fortune proceeded. It is situated near the summit of the mountain, imme-

diately opposite to the mines of Cinco Señores and Bolaños, there being about three hours of difficult ascent from Guarisamey to these mines, and nearly the same from San Dimas to the Candelaria. On the San Dimas side, the mountains are very precipitous, and thus the mine of Candelaria has been worked to the depth of nearly 600 varas, by adits driven one below the other upon the lode, the whole expence being defrayed by the value of the ores produced. The last, a most magnificent work, is driven nearly 500 varas into the mountain, with such amplitude that a stage-coach might pass through it into the very heart of the mine, which may be worked 600 varas lower by pursuing a similar plan.

The rich ores of the lode have been found, from the surface to the present depth, in separate beds, perpendicular to the horizon, (commonly called "*clavos á pique*,") and divided by intermediate masses of rock. The beds of ore have been constant from the surface downwards, and in that part of the lode hitherto examined, (which comprises a horizontal distance of near 500 varas,) there are four deposits of ore, with an equal number of intermediate "cavallos," or layers of rock. The lowest levels of the Candelaria are now 100 varas below the last adit, and the owners, who do not possess the means of either draining them by machinery, or of driving another adit, cannot work the mine as it requires, and yet have insisted upon such enormous terms, that they have hitherto deterred foreigners

from undertaking to assist them. Disappointed in their unreasonable expectations, they now, I believe, would be glad to repair their error by granting very favourable conditions to the adventurers; but even in this case great caution would be requisite, as some claim upon the mines is still retained by Zăm-brānŏ's family, and it would be necessary to take precautions against the possibility of a lawsuit before any attempt could be made to bring this most valuable district again into activity.

A little below Guārĭsămēy, and in the same ravine, is the district of San José Tăyŏltītă, which contains the celebrated mine of Lă Ābră, one of the last worked by Zambrano. It was opened in bonanza, and continued so to the depth of 100 varas, where the progress of the works was impeded by water; and this was never drawn off, in consequence of the death of the proprietor, which took place at Durango. His nephew, at the commencement of the Revolution, collected what money he could, by extracting the pillars of all the mines belonging to the house of Zambrano, and fled to the Peninsula with the produce. The mine now belongs to Don Antonio Alcalde, one of the executors of Zambrano, and would, if worked anew with the other mines of the district, with a little science and activity, probably yield immense profits. The whole should be undertaken, however, as one negotiation, as, in such insulated districts, to make roads, and organise supplies, for a small establishment, is a very unprofitable task. Of the

amount of the silver drawn from the Sierra Madre by Zambrano during the twenty-five years that he continued his labours, nothing certain is known; but Mr. Glennie, from whose notes I have borrowed the whole of the details given above, states that he himself saw in the books of the Custom-house of Durango, *eleven* millions of dollars registered as the sum paid by Zambrano as the King's Fifth; and this fact was confirmed to me by the Governor, who examined the registers himself in order to ascertain it. It is likewise corroborated by the number of mines opened at Guārĭsămēy and the surrounding districts in an incredibly short space of time; by the peculiar richness of their ores; and by the immense weath of Zămbrānŏ, (diminished as his profits must have been by the expences of working,) of which so many splendid monuments remain. Nor can one witness without regret the decline of a district capable of communicating so beneficial an impulse to the country around; but which, with its treasures still unexplored, is now almost entirely abandoned.

A little to the north of Guārĭsămēy, is the mineral called Bācīs, which was not visited by Mr. Glennie, on account of the total destruction of the roads by the rains: the same cause prevented him from reaching Tămăsūlă, Cănēlăs, and Sĭānŏrĭ; all valuable districts; the two last of which are situated on the extreme North-western boundary of the State of Durango. Bacis has been long given up, on account of the difficulty of draining the mines without machi-

nery; but it is said that the lodes were extremely rich in native silver, and that, in the principal mine, solid masses of this metal had been actually cut out, when the progress of the works was stopped by the water.

This may be one of those embellishments in which mining districts abound; but there is nothing improbable in the supposition, the same thing having occurred in other parts of the Sierra Madre, as well as in the mine of Barranco at Bolaños; from which I possess a piece of silver, which, but for a small portion of the matrix attached to it, would, from its size and purity, be pronounced to have been already submitted to the action of fire.

From Durango, Mr. Glennie, whose observations I must still take as my guide, proceeded to Chĭhūahŭa, respecting which State my stock of information is very limited.

From the report transmitted to Congress by the Governor, in conformity to the 161st Article of the Federal Act, it appears that the population of the State, according to the census of 1821, amounted to 112,694 souls, of which about one-third are pure Indians, inhabiting the dreary mountains of Tărăhŭmără, and half civilized by the missionaries who reside amongst them.

The revenue of the State, in 1825, was 69,369 dollars, and its expences, including the contingent, 63,422 dollars. The inhabitants are thinly scattered over a vast tract of country occupied by great

breeding estates (Haciendas de cria), abounding in mules and horned cattle; but agriculture was in a very depressed state, and the proprietors were looking anxiously to the mines, from which alone they expected a market. Of the mining districts, that of Jesus Maria was alone in a flourishing state; Santa Eulalia being entirely abandoned, and Bătŏpĭlăs and the Părrāl but little worked. Some account, however, of these sources of past and future prosperity, may not be uninteresting.

On entering the State of Chihuahua, the first district of any consideration is that of San José del Părrāl, situated upon the Eastern edge of the Sierra Madre, and near the Southern boundary of the State of Chĭhuāhuă, in a level country of easy access. The mines lie amongst some undulating hills, thickly covered with pasture, and of inconsiderable elevation. The lodes are easily distinguished by their rocky crests, which rise above the smooth and rounded surface of the hills. The ores are very abundant, but poor, although from time to time some rich "clavos" have been discovered. This disadvantage is compensated by the trifling expence at which they may be reduced, from the cheapness of the animals employed in the process, and the very abundant supply of grain in the surrounding country. The only article of high price is quicksilver. The salt and magistral are abundant, and cheap; but there is not a sufficient supply of water to move machinery during the whole year, and as the rains are very

variable, it cannot be depended upon, even for a certain number of months. The mines have been worked to a considerable extent, some of them being 300 varas in depth, and they are almost all in so dilapidated a state, that a considerable capital would be required to put them into repair. The water in the old levels is abundant. Parral has a numerous population, but with the exception of two or three small mines of great promise, and which require an inconsiderable outlay, it is thought that capital might be invested with a greater prospect of success in other districts, where the ruins might be more easily repaired.

On the Western declivity of the Sierra Madre, and in nearly the same parallel of latitude as the Părrāl, are the famous mines of Bătŏpīlăs. To enter into a minute description of this extraordinary district would exceed the limits of this work. I shall, therefore, only subjoin a few remarks upon its situation and produce. Its distance from Părrāl is about eighty leagues, nearly due West, and it is situated in a very deep ravine, similar to that of Guārĭsămēy. The climate is warm, yet healthy. The metallic lodes, visible by their elevated crests, are almost innumerable, and by far the greater number of them have never yet been examined. The principal mines are, El Carmen, San Antonio, Pastraña, Arbitrios, Dolores, Candelaria, and Buen Suceso, with many others which it is not necessary to enumerate. The Carmen is the mine that produced the enormous

wealth of the Marquis of Bustamante, and from which a mass of solid silver was extracted weighing seventeen arrobas, or 425lbs. The ores of Pastraña were so rich, that the lode was worked by bars, with a point at one end and a chisel at the other, for cutting out the silver. The owner of Pastraña used to bring the ores from the mine with flags flying, and the mules adorned with cloths of all colours. The same man received a reproof from the Bishop of Durango, when he visited Batopilas, for placing bars of silver from the door of his house to the sala, for the Bishop to walk upon.

Buen Suceso was discovered by an Indian, who swam across the river after a great flood. On arriving at the other side, he found the crest of an immense lode laid bare by the force of the water. The greater part of this crest was pure and massive silver, and sparkling in the sun. The whole town of Bătŏpīlăs went to witness this extraordinary sight as soon as the river became fordable. The Indian extracted great wealth from his mine, but on arriving at the depth of three varas, the abundance of the water obliged him to abandon it, and no attempt has been since made to resume the working.

In this district the silver is generally found pure, and unaccompanied by any extraneous substance. The reduction of the ores is consequently easy and simple. When the silver is not found in solid masses, which require to be cut with the chisel, it is generally finely sprinkled through the lode, and often

seems to nail together the particles of stone, through which it is disseminated. The lodes are of considerable width, but the masses of silver are only met with at intervals.

In the mine of El Carmen, the Marquis of Bustamante, after the first bonanza, drove thirty varas in depth without meeting with any thing to repay his labours; but being fully persuaded that all lodes have their alternate points of good and bad, he continued until, at the depth of forty varas, he met with the second bonanza. There is very little water in the mines of Batopilas, excepting those situated near the bank of the river, and these the river itself might be made to drain. The population of the town was, at one time, very considerable, but it has decreased of late, whole families having gone to the new discoveries of Mŏrēlŏs and Jesus Maria; the first of which lies in the vicinity of Batopilas, and appears to possess all the characteristics by which the lodes of that district are distinguished. It was discovered in the spring of 1826, by two brothers (Indians,) by name Arauco, to one of whom a little maize for tortillas had been refused upon credit the night before. In two months they extracted from their mine 270,000 dollars; yet in December 1826, they were still living in a wretched hovel close to the source of their wealth, bare-headed and bare-legged, with upwards of 40,000*l.* sterling in silver locked up in their hut. I possess two large specimens of the ores: they are almost pure silver, and there is conse-

quently no difficulty in reducing them by fire, however rude or defective the process. But never was the utter worthlessness of the metal, as such, so clearly demonstrated, as it has been in the case of the Araucos, whose only pleasure consists in contemplating their hoards, and in occasionally throwing away a portion of their richest ores to be scrambled for by their former companions, the workmen.

Throughout the Sierra Madre, instances of this sort have occurred, for these wild and distant districts are visited only when the fame of their riches attracts adventurers from the towns. For some time, they have neither supplies of any kind, nor intercourse with the more civilized part of the country; and when a few straggling pedlars first penetrate into these fastnesses, the avidity with which their wares are bought up, at the most unheard-of prices, is quite astonishing. The brother of the Governor of Durango, a lawyer by profession, informed me that, at the commencement of his career, he had been employed to visit the district of Refugio, which, like Morelos, was then recently discovered, in order to terminate some disputes between the proprietors of the different mines. He found the original discoverer, Păchēcŏ, surrounded by a swarm of harpies, to whom, not being able to convert his bars into dollars with sufficient rapidity, he had given checks (boletas) upon his mine for a certain number of cargas of ore, for which they had consented to exchange their goods; and he assured

me that one of these men, who had received a boleta so worded as to entitle him to select his own ores, (a toda satisfaccion,) by waiting, and refusing all but the very richest stones until he had completed his five cargas, obtained nearly 8,000 dollars for an old cloak with a red velvet lining, with which Pacheco's fancy had been much struck.

The real amount of the bonanza of El Refugio was never correctly ascertained, but Don Francisco Mĭrămōntĕs, who acquired as "Habilitator" three bars (or one-eighth) in Pacheco's mines in the year 1811, appears, by the registers of Durango, to have returned to that place in 1814 with 337,000 dollars. The mines, none of which exceed seventy varas in depth, having been worked only by an open cut, (a tajo abierto,) are now abandoned.

To the North of El Părrāl, and about five leagues to the South-east of the city of Chihuahua, is the ancient mining district of Santa Eulalia. It has been long abandoned, and the mines are in a ruinous state. The ores were generally found in loose earth, filling immense caverns, (salones,) of which some are stated to be sufficiently large to contain the cathedral of Mexico. The correctness of this assertion may require confirmation; but there can be little doubt of their magnitude, since the last bonanza extracted from one of them continued for nine years, and one real being laid aside for each marc of silver produced, a fund was formed, out of which the cathedral of Chihuahua was built, and a fund of

reserve formed, of 100,000 dollars. The ores of Santa Eulalia are generally mixed with a considerable quantity of Galena, which renders them fit for smelting.

Upon the Western descent of the Sierra Madre, eighty leagues from Chihuahua, is the celebrated and recently-discovered district of Jesus Maria. This "Mineral"* was denounced in the year 1822, but was at first very little worked, in consequence of the scarcity of provisions, population, and every other necessary for mining operations. It was, in fact, nearly abandoned again, on account of these difficulties, until a few men more persevering than the rest, after suffering great privations, succeeded in working two or three of the most promising lodes, to the depth of fifteen or twenty varas, where they began to extract such rich ores that the attention of the surrounding country was again called to this spot. A search being made among the neighbouring mountains, upwards of two hundred metallic lodes were registered in one year, within a circle of three leagues

* "Mineral" is the term now used to express a Mining district, in lieu of "Real," which is thought to savour too much of *Royal* rights. In this, as well as in some other terms employed in this work, I fear that I have sinned against the prevailing notions of the day; for I have actually put into print "Puente del Rey," instead of "Puente Nacional," and talked of Counts, Marquises, and other obsolete titles, in lieu of designating their proprietors by their present appellation of citizens, which has been bestowed upon them by the simplicity of Republican phraseology.

in diameter. The first inhabitants who flocked to this new district, were principally poor people, who became possessed of mines which they had not power to work; and on this account few have yet attained any considerable depth. The deepest, (Santa Juliana,) is not more than seventy varas, but it has produced ores so rich, that they have been carried to Chĭhūahŭa, (eighty leagues,) and to the Parral, (one hundred and thirty leagues,) to be reduced, there not being any reduction works on the spot when the bonanza commenced. Near the surface of the earth, all the lodes contain a considerable quantity of gold; this diminishes as the workings increase in depth, while the proportion of silver augments. The Mineral is situated in a deep ravine with very little level ground about it, the mountains rising on each side from the arroyo. In 1826, the population was rapidly increasing, and there was no want of the necessaries of life, though every thing was still exceedingly dear. In the immediate neighbourhood are several mining districts of very great promise, some ancient, and some newly discovered. Such are Rosario, Nabosayguame, El Potrero, Quipore, El Pilar de la Cieniguita, El Pilar de Milpillas, Batopillilas, and Cajurichic. These form a circle, the centre of which is the Indian village of Moris, situated in an open valley capable of considerable cultivation. Jesus Maria is near the summit of the mountains, and is consequently cold in the winter, the surrounding ridges being occa-

sionally covered with snow. Moris is in a temperate climate, almost bordering upon *Tierra Caliente*. Two leagues below Jesus Maria there is a small plain, well adapted for reduction works, and affording pasturage for animals, but it is necessary to open a road to it down the ravine.

The boundaries of Chihūahŭa to the East and North-east are the States of Cŏhăhūilă and Tēxăs, and the Territorio* of New Mexico, with the Rio Bravo del Norte as a line of demarcation. To the West (both North and South,) the vast State of Sonora and Cinaloa extends, occupying the whole space between twenty-two and a half and thirty-three and a half of North latitude, and forming the Eastern Coast of the Gulf of California up to the Cerro de Santa Clara, where the Indian lands South of the rivers Gila and Colorado commence. Beyond these again, the stripe, or belt of missions, composing New California, stretches as far as the Port of San Francisco, (in latitude 38,) and from thence, by Cape Mendocino, to the boundary line in 42°; while Old California occupies the Peninsula, forming the Western shore of the Gulf, which runs parallel with the Coast of Sonora, and terminates with Cape San Lucas and Cape Palmo, nearly opposite to Măzătlān.

Of New California little or nothing is yet known. Old California has been crossed since 1821 by a few

* Territorio, as has been already stated, means a district, or province, the population of which is not yet sufficiently considerable to entitle it to rank as an independent State.

foreigners; but the first authentic account that the world will receive of this part of the Mexican dominions will probably proceed from Dr. Coulter, a gentleman of great science and activity, now in the service of the Real del Monte Company, who intends, upon the termination of his engagement with the Association, to proceed to the North, and to employ two years in exploring the frontier provinces of New Spain. General Victoria, whose protection I solicited for Dr. Coulter in this arduous undertaking, promised to give him every facility. Indeed the Mexican Government has a direct interest in his success, for it knows nothing at present of its possessions to the North of Sonora, and has ample employment in the more Central Provinces for the few scientific natives, whose services it can command.

General Wavel, whose projects of colonization in Texas, where he possesses a large grant of land, are already before the public, has had the goodness to furnish me with a very detailed account of that province, which will, I believe, be found to comprise all that is at present known of the Eastern frontier North of the River Bravo.* The country appears to be rich in valuable produce, abounding in water, and possessing rivers of sufficient size to ensure to its inhabitants the benefits of internal navigation, which have produced so wonderful an effect, in the course of a few years, in the neighbour-

* *Vide* Appendix, Letter B.

ing valley of the Missisippi. Unfortunately for Mexico, these advantages have been duly appreciated by her neighbours in the United States. Some hundreds of squatters, (the pioneers, as they are very appropriately termed, of civilization,) have crossed the frontier with their families, and occupied lands within the Mexican territory; while others have obtained grants from the congress of Saltillo, which they have engaged to colonize within a certain number of years. By thus imprudently encouraging emigration upon too large a scale, the Mexican Government has retained but little authority over the new settlers, established in masses in various parts of Texas, who, being separated only by an imaginary boundary line from their countrymen upon the opposite bank of the Sabina, naturally look to them for support in their difficulties, and not to a Government, the influence of which is hardly felt in such remote districts.

In the event of a war, at any future period, between the two republics, it is not difficult to foresee that Mexico, instead of gaining strength by this numerical addition to her population, will find in her new subjects very questionable allies. Their habits and feelings must be American, and not Mexican; for religion, language, and early associations, are all enlisted against a nominal adhesion to a government, from which they have little to expect, and less to apprehend. The ultimate incorporation of Texas with the Anglo-American States, may there-

fore be regarded as by no means an improbable event, unless the Mexican Government should succeed in checking the tide of emigration, and in interposing a mass of population of a different character, between two component parts, which must have a natural tendency to combine into one.

A proposal to this effect was, I believe, made to the President in 1826, by John Dunn Hunter, whose history excited much interest in this country a few years ago.

The correctness of the account contained in his book of his origin, and early adventures, is denied in the United States, and Hunter has been denounced, by their periodical publications, as an adventurer who imposed upon the credulity of the British public, by representing himself as the hero of a romance of his own creation. To me it appears that his crime has been the boldness with which he vindicated the rights of an injured, and persecuted race, to whom he devoted his life, and in whose service he was at last sacrificed. No one can have known him, for however short a time, without being convinced that, in whatever manner his connexion with the Indians may have originated, he was a real enthusiast in their cause. Upon every other subject his language was coarse, his appearance dull, and his manner totally devoid of energy and grace; but as soon as that chord was touched, his countenance lighted up at once, his expressions became forcible and picturesque, and where words failed him, (as they some-

times did from his imperfect acquaintance with the English language,) the eye, and even the agitation of the man, bespoke the truth of the sentiment, which he was labouring to express.

Hunter's object in visiting Mexico, (in as far as I could ascertain it,) was to induce the Government to assign a portion of the vacant lands in Cohahuila and Texas, to some numerous tribes of Indians, mustering in all nearly 20,000 warriors, who had been driven from their hunting-lands on the Missouri and the Missisippi, by the rapid spread of the population from the Anglo-American Eastern States. Retiring across the vast Prairies of Louisiana, and pursued, step by step, by that civilization, before which they fled, they entreated Mexico to grant them lands which they might call their own; and offered, if allowed to settle upon the Southern banks of the Colorado and Sabina, to take the oath of allegiance to the Government, to embrace the Catholic religion, to devote themselves to agricultural labours, and to defend the frontier against all encroachments. This favourable opportunity of acquiring a valuable addition to the population of the country was lost by that dilatory spirit, which, both in Spain, and its dependencies, has been the source of so many evils. Hunter left Mexico without having received any positive answer to his demands; and it is said that, in order to clear himself from the imputation of bad faith before the great council held upon his return, he advised the Indians to cross the frontier, and to

occupy the lands, the cession of which they had solicited in vain.

This proposal was approved of by some of the tribes, but rejected by others; and a very small body of Indians entered the Mexican territory with Hunter, who proceeded, in conjunction with a few American settlers, to proclaim the independence of Texas, under the name of Freedonia.

They were opposed by the Mexican Commandant of the Eastern Internal Provinces, (Don Anastasio Bustamante,) in conjunction with Colonel Austin, the chief of the flourishing establishment formed by the American settlers at the mouth of the river Brazos; and the Indians, on the appearance of so formidable a force, were glad to obtain terms by immediate submission. It is not known whether Hunter was given up as a peace-offering to Bustamante, or killed in some skirmish; but his head certainly fell into the possession of the Mexican General, with that of Field, a white man, who, like Hunter, had passed his life amongst the Indians, and was regarded as one of their chiefs.

As this event took place a very short time before my departure from Mexico, I was unable to acquire any information respecting it; nor am I aware of the changes, which Bustamante's vigorous operations in Texas may have produced. It is to be hoped that what has already taken place there will serve as a warning, and that the Government will henceforward pay some attention to this valuable possession; for,

without bearing any ill-will towards the United States, but entertaining, on the contrary, a very sincere admiration of their progress, I may be permitted, as an Englishman, to observe, that it cannot suit our interest to see their line of coast extended as far South as the Rio Bravo del Norte, which would bring them within three days sail of Tampico and Veracruz, and give them the means of closing at pleasure all communication between New Spain and any European power, with which they might happen to be at variance themselves.

I shall beg leave to refer my readers to the Appendix for any farther information that may be desired respecting Texas; and return at once to the Western Coast, in order to close my account of the Northern frontier, with some details respecting Sŏnōră and Cĭnăloă, which will not, I hope, be found devoid of interest.

For these I am indebted almost exclusively to Colonel Bourne, whose extremely curious journal I annex at full length in the Appendix. (Letter C.) I have likewise made use of the information which he has been so obliging as to afford me in order to rectify in my map the numberless errors committed in all former publications respecting Sonora; and I hope that I may by this means be enabled to throw some light upon the real character of a country, which, though little known in Europe, or even in Mexico, can hardly fail, in the course of a few years, to acquire great and permanent importance.

Colonel Bourne entered Cinaloa, (to the South of Sonora, properly so called,) by its Southern boundary, the river Cañas, or Bayona, (it is known by both names,) which separates the State of Sonora and Cinaloa from that of Guadalajara, or Jalisco. From thence he proceeded to Rosario, the first mining town of importance in the Southern part of the State, and the depôt for the port of Măzătlān, from which it is distant twenty-five leagues. Rosario contains a population of 6000 inhabitants; Măzătlān, though rising into importance as a port, consists entirely of huts, composed of mats, hides, and palm-leaves, all the principal merchants connected with the East India trade having their residences at Rosario, or at the Presidio of Măzătlān, (nine leagues inland,) where the climate and water are better than the immediate vicinity of the port.

At Mazatlan, Colonel Bourne, whose object was to inspect the mining districts in the North of Sonora, (300 leagues from Rosario,) embarked for Gūāymăs, in lieu of performing the journey by land, where he arrived after a tedious passage of fifteen days. The voyage does not usually exceed eight.

Guaymas is situated in latitude 27.40 North, about the middle of the Gulf of California, and both Mr. Glennie and Colonel Bourne state it to be a magnificent harbour, capable of containing two hundred vessels, and sheltered from all winds by the lofty hills surrounding it, and by an island, which

leaves only a narrow outlet towards the gulf. The town did not exist before the Revolution. It now contains 3000 inhabitants, and 300 houses; some of which are in the modern style, and handsomely built. In 1824, when there was no custom-house in Sonora, twenty-eight vessels were lying in the port of Guaymas at one time, whose cargoes were of course introduced duty free.

The imports consist in Chinese, East Indian and European manufactures, brandy, paper, refined-sugar, cacao, coffee, and tea, &c. &c.; and the exports, in wheat, flour, beef, hides, furs, copper, silver, and gold.

The heat in summer is very great, yet the town is healthy, and neither the Vomito, nor the Cholera Morbus are known: the most serious inconvenience experienced by the inhabitants is the want of water, which is brought from wells three miles inland.

From Măzătlān to Guaymas the navigation is neither intricate nor dangerous: there is much shoal water upon the Sonora coast, but that of Old California is bold and lofty, with deep water close in shore; and the islands, of which there are several in the gulf, are all high land, and visible at a considerable distance. There is, therefore, reason to suppose that, when the population of Sonora increases, as I am convinced that it speedily must, Guaymas will become the principal commercial depôt upon the Western Coast of New Spain; being much superior as a port both to Mazatlan,

and San Blas, and easier of access than Acapulco, to vessels from Calcutta or China; which, from the prevalence of particular winds in the Pacific, seldom make the Mexican coast to the South of Guaymas, and often steer as far North as Cape Mendocino or San Francisco.

In the Gulf pearls are found in great abundance; they are mostly of a small size, and these are so common in Mexico that they are worn by the lowest orders in the streets. But California, likewise, produces pearls of the very finest quality; nor do I know any part of the world where necklaces of greater beauty may be seen than in New Spain. The pearls of Madame de Regla, of her sister the Marquesa de Guadalupe, and of Madame Vĕlāscŏ, are all remarkable for their size; and General Victoria is in possession of an oyster, recently sent to him from Sonora, which contains a single pearl not yet entirely detached from the shell, but perfect in all its parts, and larger, I think, than any pearl that I ever recollect having seen.

In 1825, a company was formed for exploring the pearl-oyster beds in the Gulf of California, and two vessels were sent round Cape Horn, provided with diving-bells and all the supposed requisites for the fishery. The management of the enterprise was entrusted to Lieutenant Hardy, R.N., who, after a great deal of trouble, succeeded in making an equitable arrangement with the Mexican Government as to the division of the profits; and proceeded to

Guaymas to take the command of the expedition upon its arrival. Unfortunately, it was but too soon ascertained that the heat and the rocky bottom together, prevented the diving-bell from acting at any thing like the depth to which the native miners were accustomed to descend. One damaged pearl was the result of the first cruize, which lasted six weeks; and after a second attempt, equally long and equally unsuccessful, the scheme was abandoned as utterly hopeless. No blame attaches to the gentleman entrusted with the management in Mexico: the fault lay in the principle, which was not properly inquired into here; and its failure may serve as an additional proof of the risk incurred by the application of new theories to the opposite hemisphere, where any miscalculation in the first instance must lead to disappointment, and may be attended with ruinous expence.

When I left Mexico, Lieutenant Hardy had not returned from the North. He was said to be wandering amongst the savage tribes of the Pimeria Alta, with whom he had contrived to establish a friendly intercourse; and he will probably in this way acquire a knowledge of a country hitherto unexplored by any white. A taste for such investigations has always been a remarkable feature in this gentleman's character. A few years ago, being out of employment, he took a passage on board a merchant-vessel to the vicinity of the Tierra del Fuego, (near Cape Horn,) where he was landed amongst the

Patagonians, with whom he remained a year and a half, before the arrival of another vessel enabled him to bring himself into communication again with the civilized world. It is supposed, however, that he is not influenced in his present excursion by mere curiosity, but by a wish to investigate the mineral treasures of the Indian country, which are thought to be very great.

From Guaymas, the road to the interior of Sonora lies through Pĕtīc, a town of 8,000 inhabitants, situated in a plain near the confluence of the rivers Dolores and Sonora, thirty-six leagues from the Coast. The intervening country is level, and apparently destitute of water; the rivers from the Cordillera losing themselves in the sands between Petic and the Gulf; yet it is covered with herds of cattle and deer, and inhabited at intervals by Indians of the Seres tribe, of whose treacherous character Colonel Bourne's Journal gives some curious details. Pĕtīc is the depôt for the trade of Upper Sonora with the Gulf. Its inhabitants, amongst whom there are a few foreigners, (three Englishmen, two Americans, and eight Biscayans,) are wealthy, and abundantly supplied with all the necessaries of life; the country around being remarkable for its fertility.

Fourteen leagues to the Westward of Pĕtīc is the town of San Miguel de Horcasitas, upon the river Dolores. To the North of this town, the first ramifications of the Sierra Madre appear, abounding in

mines of silver, gold, and copper. A vein of the last is worked by Mr. Loisa, a merchant of Petic, who raises the ore at an expence of four dollars the quintal, and sells it, when conveyed to Guaymas by his own mules, for fourteen dollars; at which price it is bought up for the China market, where the copper of Sonora bears a high price, in consequence of the large proportion of gold contained in it.

From San Miguel to Ūrĕs, on the Southern bank of the river Sonora, the distance is twelve leagues. The plain to the South of this town is one of the most fertile districts in the State; but to the North, the road runs along the banks of the river Sonora, confined in its course by two of the precipitous ridges which branch out from the great Cordillera and intersect the level country at regular intervals. These ridges preserve generally the same direction, (from North to South,) and run parallel with each other towards the Pacific, separated by the rivers Dolores, Sonora, Ŏpŏsūră, and Bărispĕ, which fertilize the intervening spaces. In all these streams gold has been found, but in none so constantly as in the river Sonora, the mountains on either side being nearly perpendicular, and full of mineral veins.

After passing through the cañada above Ures, the town of Bābĭăcōră is found upon a Table-land, a little elevated above the bed of the river; it extends twelve leagues in a Northerly direction, and contains the towns of Conche and Sonora, with a number of

Ranchos and Haciendas. Eighteen leagues to the Eastward, again, is the town of Ŏpŏsūră, situated upon the banks of a river of the same name, not laid down in any map, but which, after running over a great extent of country to the South-west, enters the river Yaqui a little above Onābäs, in latitude 28.

The vale of Ŏpŏsūră is divided from that of Babiacora, or Sonora, by one of those parallel ridges which have been already described. It is about twenty-six leagues in length, and varies from one to four leagues in breadth. The population consists partly of whites, who have preserved the blood of their Biscayan ancestors in all its purity, and partly of Indians of the Opātă tribe, who, in Upper Sonora, compose nearly two-thirds of the inhabitants. They live in towns, and are completely civilized, being clothed after the manner of the whites, with whom they always unite against their barbarous countrymen, the Apāchĕs; and such is the confidence reposed in them, that they are provided with fire-arms by the Government, and formed into militia companies, under the command of their own chiefs. The smiths, carpenters, and other artisans of the State, as well as the working miners, are found amongst these Indians, who are thus most valuable members of the community. They likewise furnish the Haciendas with a hardy race of labourers, many thousands of whom are distributed over the valleys of Băbĭăcōră, Sŏnōră, and Ŏpŏsūră, extending in a northerly direction towards Arispĕ,

(a town of 3,000 inhabitants, now the residence of the Commandant of the State,) and the mining district of Năcŏsārĭ.

The whole of this country is rich in every variety of agricultural produce, for besides wheat, maize, and barley, the sugar-cane grows in the valleys, with figs, pomegranates, peaches, grapes, and numberless other fruits; horned cattle, mules, and horses abound throughout the province, and may be purchased in any number, at about one-fifth of the price usually paid for them in other parts of the Republic; and to these advantages are added a most delightful climate, and the facility of a communication by water with the port of Guaymas, from which the towns of Babiacora and Oposura are only distant between seventy and eighty leagues.

Such a combination of favourable circumstances induced General Victoria, (himself a native of the North,) Don Pedro Escalante, (the Representative of the State of Sonora in the Senate,) and several other Mexicans connected with the Northern Provinces, to entertain the idea of bringing into activity, by the formation of a Company, some of the mining districts near Opŏsūră and Arĭspe, formerly celebrated for their wealth, but abandoned during the great Apache war, in the latter half of the last century; when the Indian tribes upon the frontier, irritated by the hostilities of the Spanish presidial troops, made so general an attack upon the Northern Provinces, that all the isolated establishments were

broken up, and even the towns themselves preserved with difficulty.

For this purpose an association was formed, of which Colonel Bourne is a member, and in its name a number of important mines were "denounced" in the vicinity of Oposura, which was selected, as a central spot, for the principal establishment. Of these districts a very detailed account is given in Colonel Bourne's Journal. The most noted are Cerro Gordo, (South-east of Babiacora,) and the mines of Cobriza, San Antonio, and Dolores, (within a little distance of the same place; the mines of San Juan Bautista de Sonora, (situated upon a mountain eight leagues to the North-west of Oposura, which is crossed in different directions by fourteen veins, all distinctly pronounced,) and those of San Pedro Nacosari, and Churinibabi, (to the North and North-north-west of Oposura).

In all these districts the depth of the mines is inconsiderable, their former riches acknowledged, and the causes by which their working was interrupted, known. The advances necessary in order to bring them into activity are small, for, in fact it is more remittances of quicksilver and mining stores, (which must be sent round Cape Horn to Guaymas,) than money, that is requisite. No unreasonable expectations are entertained by the Mexican proprietors, and no onerous conditions proposed: while their respectability and influence in the country are the best possible guarantee to the adven-

turers that their operations will be conducted with good faith, and can meet with no interruption.

The success of the enterprise appears to me unquestionable; and regarding as I do the prosperity of the mines of Mexico, as intimately connected with that of our own trade and manufactures, I should think it a subject of just regret, if, after embarking so eagerly in speculations, of which nothing certain was known, capitalists should not be found to engage in one, the result of which can hardly be regarded as doubtful.

I am aware that many of the statements contained in this, and the preceding books, respecting the mineral riches of the North of New Spain, will be thought exaggerated. They are not so: they will be confirmed by every future report; and, in a few years, the public, familiarised with facts, which are only questioned because they are new, will wonder at its present incredulity, and regret the loss of advantages which may not always be within its reach.

I am willing to hope, however, that my present undertaking may have the effect of directing the attention of many of my countrymen to a field, the importance of which has been hitherto but little suspected. Many of the facts detailed in the preceding pages are known in Mexico only by persons immediately connected with the part of the country to which they relate, but by them they are unanimously confirmed.

It may be asked, how a territory, possessing such vast natural resources, can have been reduced to the state of comparative poverty in which it now lies? The cause is simple. The precious metals do not in themselves constitute wealth, and as long as all communication between Sonora and the rest of the world was prohibited, except through the medium of the Capital, (Mexico,) and the port of Veracruz, they could not even be employed as a means of obtaining the produce of European industry, which they now command. The inhabitants, forbidden to avail themselves of the harbours upon their own shores, without quicksilver, (so essential in mining processes,) and without a mint, (the nearest was that of the Capital, 600 leagues from Arispe,) thought little of the mineral treasures by which they were surrounded, and devoted their whole attention to the cultivation of those, upon which their subsistence and comforts depended.

Their Haciendas, their flocks and herds, horses and mules, constituted their only care; and no portion of Mexico is richer than Sonora in these: but even at the present day, in many of the larger towns, money is unknown: and sales are effected by barter, the produce of the Interior, (as silver bars, gold dust, hides, or flour,) being exchanged for the imports of Guaymas, and Măzătlān at Pĕtīc, or Rosārĭo, Ālămŏs, and Cosălā. There is no mint, as yet, nearer than Durango or Guadalajara, and until an establishment of this nature be formed, the

circulating medium will of course continue very small: but the exports of the precious metals in bars and grains to Calcutta and Canton are very considerable; the intercourse with India and China being already more frequent than that with any of the Southern Provinces of the Republic.

The inhabitants, who are frank and cheerful in their manners, industrious, brave, and hospitable in the highest degree, will soon learn to turn the advantages of their present position to account. From their former enemies the Apaches, and other savage tribes, North of Arispe, and the Presidio of Fonteras, (latitude 31;) they have no longer any thing to apprehend, for their enmity was always directed against the European Spaniards, who were obliged to avail themselves of the intervention and influence of the Creoles in order to obtain a cessation of hostilities.

The Apaches are said to be an independent and high-minded race, averse to all the arts of civilized life, excellent horsemen, skilful in the use of the lance, and formidable marksmen with the bow and arrow. They do not possess fire-arms, and are fortunately too distant from the frontiers of the United States to obtain a supply, (as the Comanches have done on the borders of Cohahuila and Texas,) from the lawless traders, who precede the advance of civilization across the wilderness. They require little beyond the undisturbed possession of their hunting-grounds, in which they were continually molested by the Spaniards; and as the Creoles already possess

ten times as much ground as they can possibly require, there is little reason to fear an interruption of the good understanding, which at present prevails.

I shall close my observations upon Upper Sonora with one more remark. Although there is no part of the country in which there are so many Creole families of pure Spanish descent, or where old Spanish names so continually recur, (as Moreno, Rodriguez, Fernandez, Espinosa, &c. &c.) Sonora has proved itself to be quite as decided as the Southern and Central Provinces, in the cause of Independence. A great number of the young men who joined the Insurgent armies in 1810, were natives of the North, sons and nephews of the most respectable landed proprietors of the Internal Provinces; and General Victoria himself, whose real name is Fernandez, although he has been induced by the general wish of his countrymen to retain that which he adopted during the war, was, as I have already stated, a native of Tămăsūlă, where his family possessed considerable property. If there are particular spots, (as Alamos, or Rosario,) where other feelings with regard to Spain are thought to prevail, it is because they are in the hands of old Spaniards, who form, wherever they congregate together in any numbers, a little isolated knot, whose dislike to the present order of things is as evident, as it is innocuous.

The road from Arispe to the Villa del Fuerte, the capital of Cinaloa, runs nearly due South about one hundred and twenty leagues. The principal towns

on the way are Ŏnābăs (on the Southern bank of the river Yaqui,) and Los Ālămŏs, a celebrated mining district, situated between the rivers Mayo and El Fuerte, in a barren plain, where supplies, even of the necessaries of life, are drawn from the valleys of Oposura and Sonora in the upper part of the State.

The mines of Alamos lie nearly five leagues to the North of the town. They resemble those of Catorce in the character of the veins, which are mostly from six to eight varas in breadth, and produce ores varying from fourteen to thirty marcs of silver to the monton. The principal mining proprietors are four brothers of the family of Almādŏs, who are said to possess a capital of half a million of dollars each: but the merchants are numerous and wealthy, and the town itself, which took its origin from the mines, is built with considerable magnificence. It contains six thousand inhabitants, and from three to four thousand more are employed daily in the mines.

To the North-east of Alamos, and nearly due West of Jesus Maria, upon the slope of the Sierra Madre, towards the Gulf, lies the "Mineral" of San José de Mŭlātŏs, discovered in the year 1806, and registered as a "Placer de Oro," on account of the quantity of gold found in the small stream which descends from Mŭlātŏs to the river below. On investigating the ravine, from which this stream issued, three elevated crests were discovered, (one of them more than one hundred varas in height,)

intersected in all directions by small threads, or veins, of white earth, containing gold in so large a proportion that the ore of inferior quality was disposed of at twelve and fifteen dollars the arroba, while the richest sold for two hundred dollars.

Two of the crests have been extensively worked, but the third is nearly virgin. All three may be explored to advantage by commencing at the summit, and sinking through the crest to the level of the ground, as the veins of gold traverse every part of the rock. The gold of Mulatos is nearly pure, the lowest quality being twenty-three "quilates," while it sometimes rises to twenty-three quilates, three and a half grains.* Some idea may be formed of the abandoned state of the district from the facts related by Mr. Glennie, to whom I am indebted for the above account, and who says, that when he visited Mulatos, he found a number of Indians suspended by ropes upon the side of the rocks, or crests described above, picking out the earth in which the gold is contained with wooden stakes, but without attempting an excavation of any kind.

I much regret that Mr. Glennie's continual absences from Mexico should have prevented him from continuing the account of his visit to the Northern Mining Districts, of which I have made such frequent use in the preceding parts of this Section. He visited both Ālămŏs and Cŏsălā, of which I shall have

* 4 grains=1 quilate ; 24 quilates, pure gold.

occasion to speak subsequently; and it would have been a satisfaction both to the public and to myself to corroborate statements, many of which may be thought to require confirmation, by the evidence of so intelligent and indefatigable an observer. I must, however, remark generally, that Mr. Glennie's views, with regard to the riches of Sierra Madre, (which he terms *one mine* from Guarisamey to Jesus Maria,) coincide entirely with those entertained by Colonel Bourne; and that the opinions of both are confirmed by all the Mexicans who have visited the Internal Provinces; by the official documents, frequently alluded to in the foregoing Books; and by the unanimous evidence of a number of most respectable individuals, whom I had an opportunity of consulting, myself, upon the subject at Durango and elsewhere.

To the North and North-west of Alamos, between the rivers Yaqui and Mayo, there are vast plains inhabited by numerous tribes of Indians; who, like the Opatas of Babiacora, have become reconciled to the restraints of civilized life. The Yaqui tribe possesses a number of towns on the Southern bank of the river of that name, each surrounded by fields and gardens in the highest state of cultivation; and South of the river Mayo, the Mayos alone form a population of 60,000 souls. Their capital, Santa Cruz, contains 10,000 inhabitants. Both the Yaquis and Mayos are docile and industrious, and supply the mining districts and farms with labourers,

and the towns with artisans, many of whom are by no means unskilful in their respective trades.

To the South of Alamos, in the direction of El Fuerte, there is little or no population; but the country is level, and the road practicable for carriages: the distance is twenty-four leagues.

El Fuerte was originally a military station, established by the Spaniards in their progress towards the North. Since the union of Sonora with Cinaloa, it has been selected as the residence of the Governor of the State, the Congress, and the Supreme Tribunal of Justice; and it now contains four thousand inhabitants. The situation is not particularly favourable; as, notwithstanding the vicinity of the river, the country about the town is unproductive, and the heat in summer insupportable. The *Tierra Caliente* of Cinaloa extends from El Fuerte, or rather from Alamos, to the confines of Guadalajara; it is one vast sandy plain, destitute of vegetation, except in the rainy season, or in spots where the vicinity of the mountains, or the confluence of two large streams, ensure a constant supply of water. This is the case at Cūlĭăcān, the most ancient and populous town in Cinaloa, situated upon a river of the same name, eighty leagues South of El Fuerte. It contains eleven thousand inhabitants; and the country about it is well watered and highly productive.

Cŏsălā, thirty-five leagues South of Culiacan, is the next town of any note on the road towards Jă-

liscŏ. It derives its importance entirely from its mines, one of which, called Nuestra Señora de Guadalupe, is very celebrated. It belongs to Don Francisco Iriarte, a relation of the President's, who refused an offer of one million of dollars, made in 1825, by an association of Foreigners, on condition that he should allow them to work his mine for a term of three years. Guădălūpĕ is free from water, and situated at a considerable elevation above the plain; it contains a vein of gold of considerable breadth, and its produce might be increased to ten times its present amount; but the proprietor, a man of very peculiar habits, often refuses to work the mine for months together, and when compelled to employ labourers upon it, in order to prevent the loss of his title by exposing the mine to a denunciation from some other quarter, never allows more than four arrobas of gold (100lbs weight) to be raised in the week.

The idea of a man possessed of boundless wealth, but refusing to make any use of the treasures within his reach, will seem incredible in Europe; but Iriarte really does not know the value of money. With at least a million of dollars in gold and silver in his house, he lives in a habitation, the furniture of which is composed of buffaloe skins, with wooden tables, and chairs of so massive a construction that it requires two or three men to lift them from one part of the room to the other. His sons, whom he never permits to leave the town, are forced to attend to a little retail shop in Cŏsălā; and his daughter, who

is pretty, is suffered to grow up in uneducated idleness. His own habits are abstemious; and his religious notions extremely strict. He dislikes allusions to his wealth, and considers any enquiry respecting his mine almost as a personal offence. To all proposals for a cession of the right of working it, even for a limited time, he has constantly given the same answer, namely, that he does not want money, and that if he did, those who offer him the most liberal terms know best that he could take out of his mine double the amount of any thing that they could give, in less time than they would themselves require to raise the money.

Under these circumstances but little is to be expected from the mine of Guadalupe until the death of its eccentric proprietor; but if any faith can be reposed in the uniform opinions of those best acquainted with Cŏsălā, its wealth is almost unparalleled; and the three sons of Iriarte must, at some future period, astonish the world by the immensity of their resources.

Cŏsălā and Ŏposūră are almost the two only spots in Mexico, in which the inhabitants are afflicted with wens, a disease so common in the mountainous districts of Columbia that the possibility of discovering a remedy for it has frequently occupied the attention of the Legislature. In both places it is attributed to some peculiarity in the water, which descends from the Sierra Madre strongly impregnated with mineral substances. It is singular how-

ever that similar effects should not be produced by it in situations which differ apparently but little from those designated as the seats of the disorder, for instance in the valley of Sŏnōră, nearly parallel with that of Ŏpŏsūră, and in Cūlĭăcān, which is almost on the same line with Cŏsălā. Perhaps the effect diminishes as the distance from the Sierra increases; for Cŏsălā is only five leagues from the foot of the Cordillera, and may consequently be more immediately under the influence of the causes calculated to engender the disease. This supposition is confirmed by the increased violence of the affection at Santa Ana, a rancho, where the ascent towards the Table-land commences, and where all the inhabitants without exception are victims to this disgusting complaint.

From Cŏsălā to the Capital, or the Central States of the Republic, there are two routes; the one by Rosario, the river Cañas, and Guădălăjără, which is impassable during the rainy season, the other due East from Cŏsălā, across the Sierra Madre to Durango. By the first of these Colonel Bourne entered Cinaloa, and he quitted it by the second, the rains having commenced at Cūliăcān on the 24th of June, and cut off all communication by the coast in the course of a very few days. He describes the ascent to the Table-land as full of difficulties, and extremely precipitous, but he nevertheless contrived to reach Durango in eight days by a road which crosses the mountains between Pāpăsqŭiāro and Gūārĭsămēy,

without passing through a single town, or Pueblo of any importance.

I have endeavoured to compress into this Section all the data now in my possession with respect to a part of Mexico, which, though least known, I am inclined to regard as the most interesting portion of the territories of the Republic. Its progress has been hitherto impeded by obstacles which no longer exist. Of its resources we possess only a very imperfect idea; but, should the details given in the preceding pages have the effect of attracting the attention of capitalists, and scientific men, I am convinced that a field will be opened to European enterprise superior in richness to any that the New World has yet presented.

In stating this I am far from wishing to encourage delusive hopes. Inquiry must precede speculation, or the errors will be repeated which have already proved so detrimental to the interests of the adventurers engaged in the mines of the Central States of New Spain. But the subject is of sufficient importance to merit attention; and attention, should it lead to ulterior projects, would, I am inclined to believe, be sufficient to ensure success.

SECTION V.

RETURN FROM DURANGO TO SOMBRERETE.—ZACATECAS.—MINES OF VETA GRANDE, AND OF THE UNITED COMPANY.—ROAD THROUGH THE STATES OF GUADALAJARA AND VALLADOLID, BY OZUMATLAN AND TLALPUJAHUA TO THE CAPITAL.—SOME ACCOUNT OF STATES OF MEXICO, VERACRUZ, OAXACA, YUCATAN, AND TABASCO.

I LEFT Durango on the 19th of December, highly gratified by the kind reception which I had experienced there from a number of most respectable Creole families, to whom I was introduced during my short visit. Amongst these were two sisters of General Victoria, very lively, and most enthusiastic politicians, a talent for which in Durango there was unfortunately much scope. The town was divided into two parties, Liberales, and Serviles; the first, the friends and supporters of the Governor, eager in the promotion of every useful reform; and the latter arrayed in battle under the banners of the Cathedral

Chapter, as the opponents of all innovation, particularly in matters connected with the Church. The struggle commenced by an attempt on the part of the State Legislature, to compel the Canons to apply to the purposes for which they had been specially bequeathed, certain funds appropriated by the Chapter; sunk in the mass of Church property, denominated Obras pias.

The Canons denied the right of interference on the part of the Civil Authorities, and for some time endangered the tranquillity of the State by the violence of their opposition. The dispute was, however, terminated amicably, a short time after my visit to Durango, the Chapter having consented to supply the money required by the Government as a loan, on condition that the proposed investigation should be dropped.

It was the intention of the Governor to employ these funds in the execution of a project, by which the appearance of the valley of Durango would be entirely changed. The town is now supplied with water by one solitary fountain, the spring (Ojo de Agua) of Los Remedios; and this, though sufficient for ordinary purposes, affords the inhabitants the means of irrigating only a very small portion of ground laid out in gardens in the vicinity of the town. It has been ascertained however, that, by bringing a canal from the river to the North-west of the valley, a sufficient fall might be obtained to distribute water to the whole plain beyond the capi-

tal; and this project has become the favourite scheme of the Governor, whose mind seemed devoted to its accomplishment. Its utility cannot be disputed, as it would bring into cultivation a large tract of beautiful land; but the city of Victoria derives such abundant supplies from the surrounding districts, that I know not whether the real importance of the plan is equal to that which the sanguine disposition of Mr. Ortiz induces him to attach to it.

I was much struck with the difference between the manner in which society is organized in Durango and in the Southern States. The women, instead of passing their days in languor and idleness, are employed, with bustling activity, in superintending the details of the *menage*, and even take a very efficient part in that most important department, the kitchen. The consequence is, that there is no part of the Republic in which the advantages of cleanliness are so highly appreciated, or the little comforts of life so well understood. My room at the Governor's was delightful, and I have still a lively recollection of the excellence of the *Café au lait*, which his kind and amiable wife brought me each morning with her own hands. I was told that this was general throughout the North, the Biscayan race and a system of good housewifery having spread together; and in Durango the general appearance of the women bespeaks more domestic habits. They are little seen in the streets, or at public places, and better educated at home. At a ball and con-

cert, which the Governor was good enough to give me the evening before my departure, I heard several very respectable amateur performers, particularly two sisters who played a duet together on the pianoforte with great facility of execution. But the queen of the evening was a young professional singer from Guărĭsămēy, (the Pasta of Durango,) whose talents were undergoing the necessary cultivation to qualify her for sustaining the part of Prima Donna at the opera of the town. Her vocal abilities had been discovered by a friend of the Governor's, who recommended her to his protection; and though I cannot in reason be expected to be as enthusiastic in her praise as her "Apasionados" in Durango, I must confess that she had a most powerful voice, which, when modified by a little tuition, might possibly be rendered agreeable.

I reached Sōmbrērĕtĕ without difficulty in ten hours; and after dining, and passing the night at Mr. Anitua's, I resumed my journey South on the following morning in the same manner; five relays of horses having been stationed for me on the road to Zacatecas—at the Rancho of Pancho Malo, Atotonilco, La Escondida, Rancho Grande, and Las Tortolas. At Fresnillo I expected to find my own horses, with which I intended to proceed direct to Zacatecas; but to my great surprise, I overtook Mrs. Ward and Mr. Martin there, the coach having been delayed a whole day at Atotonilco by a wheel giving way in passing a barranca a little to the

North of the Hacienda. It was hardly possible for such an accident to be more ill-timed, for there is not a room in the house with a whole door; and yet, in addition to chance passengers, they are tenanted by myriads of habitual occupants, who resist most strenuously every encroachment upon their territory. Fortunately, the country about is rather pretty, for there is a stream below the house, with some trees, and a little cultivation: there are likewise some hot springs, very inviting as a bath, but usually occupied by a succession of Indian women, two or three of whom may be found at almost any hour of the day sitting up to their necks in water, and very much amused at the *mauvaise honte* of the strangers, who have any scruples about joining so sociable a party.

I reached Fresnillo at three o'clock, having left Sombrerete at six. The distance is not less than seventy or seventy-five miles; but sterility is the decided characteristic of the whole intervening space. There are some extensive fields of maize, however, about San Juan de los Troges, (between Pancho Malo and Atotonilco,) and in the vicinity of Rancho Grande, where Mrs. Ward was magnificently lodged in the Hacienda of the principal proprietor; but those who are fortunate enough to have it in their power to pass over this tract of country as expeditiously as I did, should not stay to examine its beauties in detail. Upon Mr. Martin its gloomy appearance had such an effect, that he often declared that he was indebted to "Vivian Grey," the first part

of which we received at Sombrerete, for banishing a fit of the spleen, which might otherwise have endangered his life. The rapidity of my progress prevented me from feeling this in the same degree; and I was in such excellent condition for work, that after riding 150 miles from Durango in two successive mornings,* I walked about Fresnillo all the afternoon, to make inquiries respecting the mines, none of which are now in activity. Some few were taken up in 1825 by the Mexican Company; but the contracts were so injudicious, and the terms so onerous, that they were abandoned, (not, I believe, without a considerable sacrifice,) as soon as public opinion with regard to mining speculations in England took an unfavourable turn. The town lies at the foot of an isolated hill, upon which the mines are situated; platforms for the erection of Malacates, and extensive excavations, are now all that is left to denote their former importance.

The road from Fresnillo to Zacatecas is excellent as far as Arroyo de en Media, (six leagues,) but the level country ceases at San Juan de la Calera, (two

* Many people have thought Captain Head's account of distances exaggerated; but in countries where it is the custom to ride post, one hundred miles a day is by no means an extraordinary performance. I have myself ridden from Madrid to Bayonne, (one hundred "Leguas del Rey," or four hundred English miles,) in forty-seven hours; and I once went from Seville to London, when sent, under very pressing circumstances, with despatches, by Lord Heytesbury, in eight days and a half, (partly on horseback, and partly in a cabriolet,) and returned in nine.

leagues farther;) and from thence to Zăcătēcăs a succession of steep ascents and descents announces the vicinity of one of the minor branches of the Sierra Madre. The town itself is not visible until you arrive within half a league of the entrance, when you see it below you, following the direction of a deep barranca, (ravine,) of which the mountain called La Buffa, with a chapel situated upon its curiously-crested summit, forms one side. The streets are narrow, and from the want of a good police, defiled with the remains of the "Matanzas," frequent in Zacatecas, where a great quantity of tallow is made. They swarm, too, with tribes of dirty children, whose appearance, like that of their squalid parents, is by no means prepossessing. But the distant view of the town is fine, from the number of churches and convents rising proudly above the other buildings; there are several excellent houses too in the vicinity of the great Plaza, where we were lodged, and the market before our windows presented both a busy, and a curious scene. It was abundantly supplied with fish, particularly "Bagre," (a large *Tierra Caliente* fish without scales,) as well as with vegetables and fruits. The quantity of Chile disposed of was really prodigious; waggons laden with it, drawn each by six oxen, were arriving hourly from Aguas Calientes, yet their contents rapidly disappeared, piles of Capsicum sufficient to excoriate the palates of half London vanishing in the course of a few minutes.

We arrived at Zăcătēcăs on the 21st of December, and employed ourselves till the 26th, in visiting the establishments of the two Companies, who have made this district the scene of a part of their operations.

These are the Bolaños and the United Mexican Associations, between which the principal mines of Zacatecas are very equally divided.

As a mining district, Zacatecas differs materially from Guănājūātŏ, for in lieu of one great mother vein, it contains three lodes nearly equal in importance, (those of La Quĕbrădīllă, San Bĕrnăbē, or Mălănōchĕ, and Veta Grande,) with a number of inferior Vetas and Vetillas, which may be considered as ramifications of the principal lodes. Upon these nearly 3000 pits or shafts have been opened: (mostly "catas" of very inconsiderable depth.) The course of the veins is distinctly designated upon the surface, by the elevation of the crests, and may be traced even by the most unpractised eye. The works of the Companies, now that the mine of Quebradilla has been abandoned, are confined entirely to the veins North of the town. Quebradilla, which lies to the South of Zacatecas, has yielded three successive "bonanzas," (each more remarkable for the immense quantity of ores produced than for their richness:) the first soon after the Conquest; the second when worked by La Borde, (who, after Tlalpujahua and Tasco, came to make his last fortune at Zacatecas;) and the third as recently as

1810; when a Company, formed for the purpose in Zacatecas, divided upon its dissolution, in 1817, the sum of 75,000 dollars upon each "barr." But the mine was ruined in the course of their operations, and though contracted for by the United Company upon false representations, it was given up in 1825 by Mr. Alaman, who found, upon personal inspection, that the drainage could not be effected for a less sum than 400,000 dollars, while the accounts of the lower levels were too contradictory to afford any certainty that this large investment would be repaid.

On entering the mountains North of Zacatecas, about a league from the town is found the first of the two great parallel veins by which they are traversed. Upon this are situated the mines of San Bernabé, Malanoche, Pĕrĕgrīnă, and Rōndănēră, the three last of which are considered as one "negotiation."

San Bĕrnābĕ was the first mine denounced in Zacatecas. The vein was worked by the "Conquistadores," *à tajo abierto*, (by an open cut,) for the space of 800 varas; and the opinion then entertained of its productiveness is recorded by an old song still in the mouths of the lower classes at Zacatecas, and composed in commemoration of the marriage of its first proprietor Ibarra, with the daughter of the Viceroy Velasco.* The Company

* So many curious fragments of Spanish history would be lost, were it not for the "Romances" in which they are re-

has every reason to think well of this enterprise, for the amount of ores raised weekly in 1826 was considerable, the drainage nearly concluded, and the appearance of the new levels, which were about to be cleared, highly promising.

The shafts of Malanoche and La Rondanera lie about a mile and a half west of San Bernabe. The works extend over a space of nearly 800 varas, and the drainage was consequently proceeding very slowly; (about two varas in the week.) But the value of the ores raised, from the very commencement of the undertaking, had proved sufficient to cover one-third of the expence; and the produce was expected to increase rapidly as new levels were rendered accessible.

Not being a miner myself, I can only speak of the general mode in which the management of an enterprise of this nature is conducted, and of the feelings of the natives, (whom I always consulted,) respecting it. Nor must it be thought that, in this way, I could only view the favourable side of the question. There is so much rivality in mining matters in Mexico, that, by entering into communication with persons unconnected with a negotiation, I was sure to hear all the errors, (real or presumed,) that had been committed, and those too

corded, that I may be allowed to draw from the same source the only remaining record of Ibarra's good fortune. The verses are.—" Si los metales de San Bernabé no tuvieron tan buena ley, no casaria Ibarra, con la hija del Virey."

painted in the very strongest colours. It must be a satisfaction therefore to the shareholders of the United Company to know that their prospects at Zacatecas were rated very high, their contracts pronounced to be unexceptionable, and their mines excellent. All, however, added, that it was to be regretted that a second Anitua could not be found to undertake the management. The present Director, Don Joaquin Iparriguirri, is a skilful miner, but has lost much of his former activity by age; and, at the time of my visit, Mr. Schoolbred, who had been recently associated with him, was too new in office to give that impulse to the system, which it appeared to require. It was thought that, under Mr. Anitua, what had been done in a year and a half might have been accomplished in much less time.

The little mine of Lŏrētŏ, (like Sĕchō at Guanajuato, an entirely new undertaking,) borders upon that of Malanoche. It is situated upon a separate vein, and had, when I saw it, not only covered the advances made upon it by the Association, but began to yield a clear profit. The ores improved as the workings increased in depth, and they must now have reached the level at which the neighbouring mine of La Barguena, (worked to a much greater extent than Loreto,) was found to be extremely productive.

Besides the mines already enumerated, the United Company possesses that of San Acasio, situated

upon the Eastern extremity of the Veta Grande, the second lode of importance, North of Zacatecas, nearly a league and a half beyond that of San Bernabé.

San Acasio belonged originally to La Borde, (whose operations chance always seemed to favour,) and yielded a bonanza famous in the annals of Mexican mining for its extraordinary duration. It lasted twenty-two years, (from 1765 to 1782,) and completely re-established La Borde's shattered fortunes, repaired by his success in the mine of Quebradilla, and restored to all their pristine splendour by this long series of successful enterprise. The mine is known to have been abandoned by his descendants when producing good ores in its "planes," or lowest levels; and in many of the upper workings the quantity of "Atierres" (heaps of poorer ores, not then thought to be worth raising,) is known to be so great, that an association was formed in 1823, by a number of native miners, to work the mine in the upper levels, merely in order to extract these atierres, the value of which is now better understood. The project was given up in consequence of the contract concluded by the owner with the United Company, whose operations embrace the whole mine.

San Acasio has four Pertinencias, at three of which Malacates were erected for the drainage, and the extraction of ore. In December 1826, the mine was producing weekly about six hundred cargas of ore, (principally "atierres") averaging seven marcs

per monton of twenty quintals. An increase either in the quality, or the quantity, was required in order to cover the expences, which, in so extensive an undertaking, were of course considerable. It was calculated, however, that four hundred cargas more,* (making 1000 in all,) even of the same poor ores, would not only cover the "Memorias," but leave 1,000 dollars profit weekly. The Miners of Zacatecas entertained little doubt with regard to the issue of the enterprise of the Company at San Acasio, for no mine in the district bears so high a character: but the time requisite in order to reap the full advantage of the investments made is uncertain, from the vast extent of the works, which occupy a space of 800 varas upon the course of the vein. Mr. Alaman seemed to be of opinion in 1826, that nearly the whole of 1827 would be required to bring his operations to a conclusion, and some allowance must always be made for additional delays. In the course of the present year, however, the result must be known.

The Company is in possession of two Haciendas de beneficio; that of San José, in the town of Zacatecas, with fourteen Arrastres, and Cinco Señores,

* It must be recollected that profits depend upon two distinct causes, the great abundance of poor ores, yielding a given profit upon an immense mass of "Montones," or a less copious extraction of rich ores, raised by fewer hands, and "reduced" with less labour. It is in the first that the great riches of Zacatecas and Guanajuato have principally consisted.

without the town; which formerly belonged to La Borde. In his time it contained sixty arrastres. Only twenty-six are now in repair, but the number will be augmented as the produce of the mines increases.

The works of the Bolaños Company, (contracted for in 1825, as a desirable addition to the principal mines of the association, situated at Bolaños, in the neighbouring state of Jalisco,) are all upon the Veta Grande, to the Westward of San Acasio. They comprise fourteen shafts, (including the Tiro General,) originally separate mines, but now connected with each other, and worked as one negotiation. These occupy a space of 1,200 fathoms upon the vein. Few exceed 300 varas in depth; all have been productive; many remarkably rich; and none have given reason to imagine that the vein was exhausted even in the deepest levels.

The two contiguous mines of Urrīstă and Mĭlănĕză rank highest amongst those comprehended in the negotiation of Veta Grande. The first produced the capital out of which the fortune and title of the Counts of San Mateo (now united by marriage with the Marquisate of the Jărāl) proceeded; and to the second, the wealth of the Condes de Santiago de la Laguna was due. During the last forty years they have been worked, with the adjacent shafts, by the Fagoaga family, and have yielded (as stated in Table, No. 9, annexed to the first Section of the fourth Book) 2,088,425 marcs of silver, (16,832,400 dollars.)

But during the last ten years the produce has barely covered the expences, and the proprietors have derived little or no profit from the concern, although the establishment has been kept up in the hope of discovering a "clavo rico," and obtaining another bonanza. Captain Vetch having convinced himself by a long and patient investigation, that the system of management was susceptible of great improvements, and that by reducing the establishment the receipts might, even in the present state of the mines, be made to exceed the expenditure, while the extent of vein yet unexplored afforded the fairest opening for new works, entered into a contract with the proprietors, to whom he paid 130,000 dollars on the part of the Company, for the transfer of the negotiation. He likewise took fixtures and property to the amount of 207,000 dollars more, to be paid by quarterly instalments in three years; but a part of this property consisted of "tortas," and ores already in the Hacienda, which might, consequently, be regarded as silver.

The reforms contemplated by Captain Vetch met with considerable opposition amongst the native miners; and although the Company took possession of the mines in April 1826, in December the expences still exceeded the value of the silver raised. Eleven thousand dollars were coined weekly, but the charges were nearly twelve; the underground work alone averaging seven thousand dollars, and the costs of the Hacienda five. From eighty-five to

ninety-five "campos" (pairs) of barreteros (common miners) were in daily employ; and the number of "cargas" of ore reduced varied from fifteen hundred to two thousand in the week, which yielded, upon an average, thirty-five or thirty-six ounces of silver per "monton," of twenty quintals. Within a short time after my visit, Captain Vetch succeeded in carrying all his plans into execution, and in June and July, 1827, a weekly profit of 3,000 dollars was the result.

The Bolaños Company possesses a magnificent Hacienda, (La Saūcēdă,) built by La Borde, and purchased by the Fagoagas of his family, when the mine of San Acasio was abandoned. It contains seventy-four ărrāstrĕs (called in Zacatecas, tăhōnăs), with furnaces for smelting, a very perfect lavadero, (assemblage of washing vats,) and a patio (amalgamation court,) capable of containing twenty-four "tortas," of sixty "montones" each. The process is conducted nearly in the same manner as at Guanajuato, with the exception of the "molienda" (the process of grinding), which is more rapid, and less fine; each "tahoana" in Zacatecas grinding ten arrobas of ore in sixteen hours, in lieu of six arrobas in twenty-four hours, which is the maximum at Guanajuato.

There are seven "morteros" (stamps) at La Saucēda, it being calculated that one mortero will keep twelve arrastres in constant work. Salt and măgistrăl are abundant and cheap. The latter is brought

from the copper-mines at the Asientos de Ibārrā, two short days journey from Zăcătēcās.

. The costs of reduction in the Hacienda amount to twelve ounces of silver per ton, which may be taken as equivalent to the monton of twenty quintals. In very favourable times, when agricultural produce is abundant and cheap, ores may be worked as low as twenty-four ounces per ton; but they ought to reach forty ounces to cover all contingent expences, and yield a reasonable profit.

The richest ores known in Zacatecas have never exceeded forty-five or fifty marcs per monton.

The Hacienda is situated beyond the ridge of mountains traversed by the veins of Veta Grande and Malanoche, upon the verge of an immense plain, very productive in maize, but presenting as arid and melancholy an appearance as if it were entirely destitute of vegetation. There are neither trees nor water to diversify the scene, which wears, throughout, the same reddish-brown colouring; while even the mountains in the back-ground have not the beauty of outline that distinguishes those of Mexico in general, but are monotonous and uninteresting.

The whole of the machinery is put in motion by mules; and the stabling for these animals forms a very considerable addition to the size of the establishment. In 1826, the Hacienda was under the superintendence of Mr. James, who resided at La Sauceda, as Dr. Coulter did at the Tiro General of Veta Grande. To both these gentlemen we were

indebted for the greatest kindness and attention during our stay at Zacatecas, where they, in conjunction with Mr. Schoolbred, gave us every assistance in our inquiries; and, by providing us beforehand with most excellent lodgings, enabled us to prosecute them with comfort.

One of the principal advantages of Zacatecas, as a mining district, consists in the superiority of the mint, (Casa de la Moneda,) to those of the surrounding States. Three hundred people are employed in it daily. The machinery is ponderous, and a great deal of labour is wasted in filing down and weighing each dollar separately; an operation that would be rendered unnecessary by the adoption of a series of cylinders calculated to reduce the bars at once to the necessary size and thickness, as in England. But notwithstanding these defects, sixty thousand dollars have been struck off at Zacatecas in twenty-four hours: and the total coinage, according to the Governor's report to the Legislature (of January 1827), has amounted, from the 1st of January 1821 to the 31st of May 1826, to 2,067,269 marcs, five ounces and seven-eighths, or 17,571,789 dollars and four reals.

The profits of the establishment, during this time, were 126,941 dollars two reals and six grains; yet the miners and rescatadores received dollars for their bars in the short space of four days. As the funds of the mint augment, the facilities for this operation will increase likewise; while mining enterprises, which always receive an impulse in proportion to

the means of converting produce, at a fair and fixed price, into the ordinary circulating medium of the country, will undoubtedly prosper in the same ratio as the mint itself.

The whole of the machinery now in use is of brass, and made in the town. There are three flies for stamping, each worked by eight men, who are paid according to the number of dollars struck off, at the rate of two reals each, the talega, or thousand. They often earn sixteen or twenty reals per diem, so that the coinage by each fly, in the working hours, must be from eight to ten thousand dollars. The dies are cut by an Italian, and the coinage is exceedingly good, though disfigured by the cap of liberty; which, however discredited in Europe, is still supposed in America to be emblematic of all that man holds most dear. Besides dollars, one and two Real pieces are coined, which are much wanted in other States.

The ores of Zacatecas have no Ley de Oro, and the mint no Casa del Apartado, in consequence of which the rich ores of Guarisamey were sent through Zacatecas to the Capital, where alone the separation of the gold from the silver could be effected. This has led, (as stated in the preceding Section,) to the establishment of an Apartado in Durango, where, probably, the gold ores from the whole of the North will, in time, be concentrated.

The State of Zacatecas contains a registered population of 272,901 souls. Of these, 22,000 are assem-

bled in the capital, and 6,000 in the village of Veta Grande, in its immediate vicinity. The rest are distributed throughout the eleven "partidos," or districts, into which the territory is divided; viz. Zacatecas, Aguas Calientes, Sombrerete, Tlāltĕn-āngŏ, Villanueva, Frĕsnīllŏ, Jĕrĕz, Măzăpīl, Nĭevĕs, Pinos, and Jŭchĭllīpă.

Many of the towns, as Sombrerete, Fresnillo, Jerez, Pinos, and Năchĭstlān, have a population varying from fourteen to eighteen thousand souls; and in the highly cultivated district of Agnas Calientes alone, (South of the Capital,) 35,000 inhabitants are registered. But North and East of Zacatecas, the country is divided into vast breeding estates, like Sierra Hermosa, the Mezquite, and others, which we visited on the road to Sombrerete. There, the population is thinly scattered over an immense tract of country, and a few spots of cultivation are lost amidst the deserts that surround them. Yet the total agricultural produce of the State is very considerable. By the statistical tables annexed to the Report of 1827, it appears that 18,084 fanegas of maize are sown annually, and 670,956 reaped; 19,933 cargas of wheat are raised from 1,896 cargas sown; 24,346 fanegas of frijol (haricots,) from 2,071 fanegas sown. The crop of Chile is usually about twelve thousand arrobas. By this statement, which is compiled from reports transmitted by the different Ayuntamientos, it appears that the increase of maize is as thirty-seven to one,

and that of wheat only fourteen and a fraction; a ratio of increase very much below the average of the corn and maize lands in the more Southern Provinces.

Zacatecas contains one hundred and twenty Haciendas de campo, with six hundred and sixteen Ranchos, most of which consist, however, of three or four wretched hovels. There are eleven convents of friars in the State, containing in all one hundred and ninety-eight individuals; four nunneries, with thirty-one professed nuns; and four hospitals. Manufactures there are none, except in the Capital, where there are a few cotton-spinners, and at Aguas Calientes: mining and agriculture furnish occupation for all the rest of the population. A little Maguey brandy, (Vino Mescal,) is distilled at Pinos; but every thing else requisite for the consumption of the inhabitants is imported from other States.

The Constitution of Zacatecas was completed as early as January 1825. The Legislature consists of one chamber. The religious Article is as uncompromising as might be expected from the influence exercised in the Capital, until very recently, by the friars, mostly old Spaniards; who, in conjunction with a numerous body of Spanish residents, have certainly contrived to preserve the lower orders in a very primitive state of ignorance and brutality. The Government has done little as yet towards correcting this pernicious influence, and its indifference is the

more to be blamed, as, from the very flourishing state of the revenue, its interference would have been attended with double effect. The expenditure of the State, from the 1st of May 1825, to the 30th of November 1826, (a period of nineteen months,) amounted to 340,469 dollars, and the receipts to 414,483 dollars, leaving a surplus of 74,014 dollars in favour of the State.

Amongst the most productive branches of the revenue, the Governor points out that of tobacco, which had yielded a clear profit to the State of 75,437 dollars; and he conceives that this sum may be doubled, by a system of administration sufficiently vigorous to enforce the observance of the monopoly with as much strictness as before the Revolution. The debt of the State to the Federation for tobacco amounted, on the 30th of November, 1826, to 217,176 dollars; but the "existencias," (tobacco on hand, wrought and unwrought,) for the ensuing year, were calculated at 358,598 dollars; and there would consequently be a considerable balance in favour of the State, when the realization of its own stock in trade, (for to this the tobacco revenue, organised as it now is, amounts,) should enable it to meet its engagements with the Federation. Time is necessary for the regulation of this complicated machinery in the first instance, but when the movements of all the parts are combined, the result of the partial experiments tried, hitherto, tends very much

to confirm the opinion expressed in the Fourth Section of the Third Book, respecting its probable future productiveness.

I have little to add to the details given above, except the fact that Zacatecas is the only part of Mexico, in which I am aware that, at the end of 1826, a bad feeling towards foreigners in general prevailed. We had violent prejudices to surmount in many parts of the Federation upon our first admission into the country; but those prejudices gradually disappeared, and in most places were replaced by feelings of a very different nature. In Zacatecas alone they seemed to retain all their original violence.

This circumstance may be attributed partly to the influence of the regular clergy, and partly to the different circumstances under which our mining operations in the State commenced. The working classes had never felt in Zacatecas that distress, from which they were relieved in other districts by the introduction of foreign capitals. The mines of Veta Grande continued in activity during the whole Revolution, and several other mines belonging to old Spaniards were in bonanza up to a very late period. The Companies, therefore, did little more than occupy the places of the former proprietors. Many of the changes introduced by them consisted in reforms, very necessary, but very unpalatable; and although they brought a considerable capital into circulation, the want of it had not been suffi-

ciently felt before to make the people duly sensible of the importance of this service.

They are, therefore, not unnaturally regarded as interlopers, come merely to share in advantages which the natives considered formerly as their patrimony; and as this feeling has been fomented by those who might have given it a better direction, it has more than once been upon the point of leading to very serious results. I had been prepared for this state of things by the reports of Captain Vetch and Captain Lyon, who, at a time when the safety of the individuals employed by the Bolaños Company was thought to be endangered, had very properly solicited, through me, the protection of the President. But my communications with the Governor of the State, upon my arrival in Zacatecas, inspired me with a belief that these angry feelings had subsided, until I was undeceived by the treatment which my own party experienced. Mrs. Ward usually employed her time in drawing while I was visiting the mines; and, though always surrounded by a crowd, she never experienced the slightest incivility upon such occasions, except at Veta Grande. In general, people were much delighted with the novelty of the performance; and I have seen Indians standing round her for an hour together, watching every motion of the pencil, and holding in turn an umbrella to shelter her from the sun. At Guanajuato, where fifty or sixty people were collected, while she was taking a view of the town from the Va-

lenciana mine, we were much amused at the astonishment expressed on seeing her inquire the names of the principal points, and write them down upon the margin of her sketch. "Pinta, y escribe tambien!" (she draws, and writes too!) was the general exclamation; and such an accumulation of talents in the same individual excited universal respect. But at Veta Grande she was surrounded by a sullen and gloomy mob, who purposely put themselves in her way, so as to prevent her from seeing the mines; and were only compelled to give her a little room, by the exertions of Don Rafael Beraza, who mounted his horse, and rode in amongst them until by degrees they were fairly driven back.

They did not quit the scene of action, however, without honouring us repeatedly with the appellation of Judios, (Jews); and two days afterwards, when we took our leave of the town altogether, and commenced our journey towards Guadalajara, so violent a spirit of hostility towards us was displayed, that we were for some moments apprehensive that we must have had recourse to fire-arms in self-defence. There was a great crowd in the Plaza, before the windows, where the market was held; and this increased so rapidly, as the preparations for our departure proceeded, that at ten o'clock, when we mounted our horses, there must have been at least six or seven hundred idlers assembled. By these we were received with a volley of hisses and

abuse; nor do I believe that the matter would have rested there, had we not drawn our pistols, and assured the leaders of the mob that the very first stone thrown should be instantly followed by a volley. They gave us credit for some sincerity in our intentions, and confined themselves to a wordy war, which continued until we had quitted the Plaza, beyond which no one attempted to follow, or to incommode us. We did not, however, feel quite at our ease until we had got clear both of the town, and the "Palmares," (woods of dwarf palms extending for some miles around, and noted as the scene of many a robbery,) where we almost expected an attack, and were fully prepared to meet it.

In justice to the inhabitants of Zacatecas, I must add, that the inhospitable treatment of which we had so much cause to complain, is confined exclusively to the Capital, and, even there, does not extend beyond the working-classes; an ignorant and brutal race, sunk in low debauchery, and guilty of excesses amongst themselves, which the Government has too little energy to repress. The agricultural population is kind and hospitable; and from the landed proprietors, the authorities, and the more respectable citizens, we received every proof of the most friendly disposition.

We quitted Zacatecas on the 26th of December, and slept at San Jacinto, (twelve leagues from the town;) a fine Hacienda belonging to the Marquesa

de Ruhl, where the cultivation for which the district of Aguas Calientes is celebrated, may be said to commence. On the 27th, we reached that town, about three in the afternoon. The road from San Jacinto was quite an interesting scene, for Ranchos multiplied around us at every step. We saw on all sides immense crops of maize, and met huge ox-wains, laden some with Chile, others with Zacate, and others again with the ears of Indian corn: horses, cows, and oxen abounded in "potreros," regularly enclosed with walls, and deep ditches, and every thing seemed to denote a thick and flourishing population.

In the midst of plenty, however, we ourselves were nearly starved; for having imprudently lost sight of the coach on leaving the Hacienda, and taken a different route, we found ourselves separated from our provisions, and without any prospect of rejoining them until we reached Aguas Calientes, where the two roads again met. Under these circumstances, having set out, as usual, without breakfasting, we were most happy, about one o'clock, to meet with a man carrying a large dish of frijoles and tortillas to some shepherds in a neighbouring field. Upon these we laid violent hands; a gourd was filled with water at a spring not very far off; a tree of unusual size afforded us protection from the sun; and notwithstanding the simplicity of our fare, we agreed, when we had completely cleared our dish of haricots and chile, into which we dipped alternately with Monte-

zuma's spoons,* that we had seldom made a more delicious meal.

We found a very tolerable inn at Aguas Calientes, but were not allowed to remain in it long, the Marquis of Guădălūpĕ, whom we had known in the Capital, having insisted upon our immediate removal to his house, where we passed the whole of the following day.

The conduct of this gentleman may serve as an example to all the great proprietors of New Spain. He possesses fourteen Haciendas, which, in 1813, when they first came into his possession, were in such a state of dilapidation, that the whole income derived from them did not exceed three thousand dollars per annum.

He immediately gave up the capital, and devoted ten years to the personal superintendence of his estates, which have become the most valuable in the whole surrounding country. The reservoirs and farming buildings have been repaired, and the live stock, destroyed during the first years of the Revolution, replaced; so that the Marquis already derives from his possession an income of 75,000 dollars per annum (15,000*l.*), and looks forward to a considerable increase. His stock of horses and brood mares at Cienega de Mata, and other breeding estates, amounts to eighteen thousand; and in 1826

* "Las cucharas de Montezuma," is a name frequently given to tortillas, which, from their flexibility, are constantly used as a substitute for a spoon by the lower orders.

he sold to the Bolaños Company alone fifteen thousand fanegas of maize. He is likewise working the mines of Asientos de Ibarra, of which he appears to entertain a very high opinion. The vein is of immense width (nearly twenty varas), and the ores extremely abundant, though poor. This renders it necessary to build reduction-works upon a very large scale, and as the Marquis wishes the mines to defray a part, at least, of the expences, the progress of the establishment is slow.

The town of Aguas Calientes is prettily built and situated; some of the houses are very handsome, particularly that of the Gŭadălūpĕ family, which occupies half one side of the great Plaza. In the vicinity of the town are the warm mineral springs from which it takes its name. The water is beautifully clear, and the temperature delightful. Mineral springs abound in the whole district. Some few are used for irrigation; but the generality are found inapplicable to this, or any other farming purpose, from the quantity of alum contained in the water, which, after a time, leaves a thin white coating upon the soil, and renders it totally barren. It requires some years in these cases to bring the land round again.

Aguas Calientes produces nearly one-fourth of the maize, and one-third of the frijol and Chile grown in the State of Zacatecas; the average annual crop of the first being 140,952 fanegas; of the second, 7,293 fanegas; and of the third (which is sold by

the weight), 4,291 arrobas. The wheat raised averages 4,749 cargas (of 300 lbs.), but this is much exceeded by the annual produce of Fresnillo, where 7,230 cargas are the registered return.

The town likewise contains the largest manufactory of coarse cloth that I met with in Mexico. It is called the Obrage de Pĭmĕntēl, and gives employment to 350 men and women within the walls of the establishment. Five thousand arrobas of wool are consumed in it annually; and the cheapness of this essential article (which seldom rises above twelve reals the arroba, and may often be purchased as low as seven), enables the proprietor, whose principal business consists in a Government contract, to deliver his cloth in Queretaro at the same price as the manufacturers of that town, who can seldom obtain wool under fourteen reals the arroba.

The colours principally used are red, green, yellow, and blue. For the first, cochineal is employed as a dye, at the rate of about 4½lbs. for a piece of cloth forty varas in length, and weighing 60lbs.; such being the quality and dimensions fixed by the terms of the contract. Indigo produces an excellent blue. For the yellow, two dyes are employed; one, extracted from the seed of a parasitic plant, found in abundance upon the Peruvian pepper-trees in the Baxio, and called Săcătlăscāl; the other, Pālŏ Mŏrălētĕ, a *Tierra Caliente* tree, brought principally from Amătlān de las Cañas. The Săcătlăscāl is much the strongest dye of the two, only 6¼lbs.

of it being required for each piece of cloth, (the pound is worth two and a-half reals,) while of Moralete, an arroba and a quarter must be employed, at seven reals per arroba, in addition to which there is the expence of pounding it. Mŏrălētĕ is, nevertheless, more generally used, in consequence of the difficulty of ensuring a regular supply of Sacatlascal. Either of the two with indigo, dissolved in sulphuric acid, makes a very good green.

The prices are (per vara) scarlet, twenty-four reals, green eighteen, blue sixteen, and yellow fifteen. The dearness of cochineal, which is brought from Oaxaca, and costs there three dollars the pound, and the scarcity of indigo, are the causes of the difference in the price.

At Aguas Calientes we first perceived that difference in the climate, which becomes so striking as you approach the Western Coast. The harshness of the North wind disappears, and is replaced by a soft and balmy feel in the air, unknown even in summer in the Capital, where the evenings and mornings are generally chilly. Nothing could exceed the kindness, and unaffected politeness, with which our hosts did the honours of their house. The Marquesa, a sister of Madame de Regla's, with all the beauty, and all the cleverness, for which the family, on the mother's side, is celebrated, was earnest in her solicitations to prolong our stay, but we were too much pressed to return to Mexico to allow ourselves to be tempted, and on the 29th of

December we quitted Aguas Calientes, and took the direct road to Guadalajara, by La Villita (ten leagues distant), where we slept.

Humboldt has committed an error in his map (which has been since copied by every one else), in comprehending Aguas Calientes in the Province of Guadalajara, and not in that of Zacatecas, to which it belongs. He likewise omits almost all the towns on the road to Guadalajara, and the rivers are very erroneously laid down; that over which the Bridge of Calderon is thrown being entirely left out, and the Rio Grande bronght close to Guadalajara, which it does not approach within six leagues. The boundary line between the two States lies, in reality, between Aguas Calientes and La Villita. The first part of the road is level; the last two leagues hilly; the town itself is situated in a barranca, as are most of those on the way to Guadalajara; I suppose, for the convenience of water. We found the inn tolerable, and, in addition to the ordinary supply of provisions, we procured a quantity of iced milk, seasoned with vanilla and sugar, which after a hot ride was very agreeable.

Dec. 30.—San Juan de los Lagos, eight leagues.

This town is famous for its annual fair, commencing on the 8th of December, and for a church dedicated to the Virgin, which would be regarded in any part of the world as a fine building. In its present situation, the impression is perhaps increased by the contrast with the mud-houses and wild scenery

around. I am not acquainted with the circumstances that first gave celebrity to the image of our Lady, in honour of which the church was built; but it is supposed still to possess the power of working miracles, and medals, invaluable to all who believe in their efficacy, are sold at the door of the church for a mere trifle.

The town lies in a deep ravine, almost upon a level with the river of the same name: the inn is built of stone; it is very spacious, and during the fair, proves a most valuable possession, each room being let for ten dollars a-day. I was sorry not to have been able to visit San Juan during this period, for the scene is said to be exceedingly curious. Thousands of horses and mules assemble upon the hills around, and every room in almost every house is full of merchandise of foreign or domestic manufacture, from which the merchants of the North make their selections, and lay in their supplies for the year. Diversions of all kinds are intermixed with the business of the day. Cock-fighting, Monte, and balls, occupy the leisure hours; and as the fair is a rendezvous for all the proprietors of Haciendas within a hundred leagues of the place, with their families, there is perhaps no spot in the Federation where the national manners may be seen in such purity. The fair is now declining in importance, for so many channels have been opened of late for the importation of foreign goods, that they are becoming accessible to all classes of the inhabitants

in their respective States; but the meeting will probably long be kept up for the purposes of pleasure, although no longer essential to the supply of absolute wants.

Dec. 31.—La Venta, fourteen leagues.

We left Săn Jūan a little before seven, and at eleven reached Jālŏs, where we breakfasted. The distance is called five leagues, but is in reality seven. At Jālŏs we passed two hours, the greater part of which was occupied in negotiating the purchase of two horses, for one of which I gave forty-three dollars, and for the other twenty-six dollars, and a carga-mule, that could go no farther. We made an unfortunate exchange of mules at Zacatecas, where we got rid of several miserable animals with sore backs, and received in return some fine-looking creatures, so little fit for work that they every one dropped off before we reached Guadalajara. There is a disease peculiar to Mexico, called the Asoleado, to which both horses and mules are subject when exposed, while too fat, to the violent action of the sun. It is in fact a *coup de soleil*, but in lieu of the head, it affects with them the action of the heart. The blood circulates with tremendous rapidity; and even before the disease arrives at its climax, the pulsation is so violent that it may be felt, shaking the whole frame of the animal at each throb. In this state bleeding almost to exhaustion is the only efficient remedy. Palliatives are much used by the Mexicans, but the horse usually remains subject to

a return, on the slightest exertion; and this fact is so well known, that one of the first trials to which a horse is subjected, when brought for sale, is to gallop him a hundred yards in the sun, and then to ascertain, by pressing the hand upon the withers, that he has not that peculiar throb which is indicative of the complaint. We had neglected this precaution with our Zacatecas mules, and they every one failed us. One died upon the road, and three others were exchanged in part price for horses, as the only mode of avoiding a total loss.

From Jalos we proceeded to La Venta, (seven leagues more,) a wretched Hacienda, sans meat, sans maize, sans milk, sans every thing, where we were nevertheless compelled to sleep.

On the 1st of January, 1827, we reached Tĕpātĭtlān, a pretty town, eleven leagues from La Venta, built upon an eminence, at the foot of which a little stream winds through the plain, with a belt of cypresses designating, as usual, its course. Tepatitlan is a Pueblo Ranchero, the head of a very fertile district, containing a population of 25,524 souls, and rich in maize, barley, horses, and horned cattle. The amount of grain sown is calculated at 3,553 fanegas annually; and the ratio of increase averages, in the crop of maize, sixty, and in that of barley, twelve fanegas for each one sown.

We found the inn good, and provisions abundant. I had been remarkably successful, too, in my morning's sport, having shot, besides hares, of which we

were getting rather tired, several quails, and a number of ducks of various kinds, which were abundant in the rio, or arroyo, below the town; so that we ushered in the new year by a very sumptuous repast. The weather was so mild that we placed our table in the open air, under the porch of the inn, and sate there till a late hour in the evening, talking over past adventures, and future prospects, with Mr. Martin, whom I had first known in Sweden in 1816, and wondering, since chance had thrown us together in two such distant points, in what part of the world it would be our lot again to be brought into contact.

Jan. 2.—We left Tĕpātĭtlān at seven o'clock, and reached Zăpŏtlān, or Zăpōtlănējŏ, at two. Distance twelve leagues.

Upon the "Mesa," or high Table-land, which extends as far as Cerro Gordo, I shot a number of birds called by the natives Gordillos, but resembling our woodcock in eye, plumage, and general appearance. They are nearly double the size, and of equal delicacy of flavour.

Zăpōtlănējŏ, at a distance, appears quite a mass of verdure: the situation is extremely sheltered to the North and East, and the supply of water abundant; but the descent from Zăcătēcăs, which must be considerable, had been so very gradual, that, notwithstanding the increasing mildness of the air, we were not prepared to find ourselves suddenly transported into *Tierra Caliente*, and surrounded by a vegeta-

tion worthy of the Vega of Cuāutlă itself. All the fruits of which Jălāpă can boast, are to be met with in this isolated spot; and we saw with astonishment, as we approached it, the dark foliage of the Aguăcātĕ and Chírímōyă contrasting with the light green of the sugar-cane and the brilliant yellow of the orange. During the afternoon, we feasted upon Zăpōtĕs, and other delightful fruits, of which we had been long deprived; and on the following morning, we laid in a stock of oranges for the road, the value of which is never so fully appreciated as after a dusty ride beneath a burning sun.

About four leagues North-east of Zăpōtlánējó, we passed the Bridge of Cāldĕrōn, celebrated in the annals of the Revolution for the action which proved so fatal to Hídālgo, and gave Cāllējă his title. It is thrown across a river, with banks precipitously steep, and presents a position highly favourable for defence, if attacked only in front, but disadvantageous if turned, as it was, by the Royalist cavalry. On the hill, upon the Guădălājāra side, there is still a mound of stones, covered with an infinity of little crosses, which denote the spot where the slaughter is said to have been greatest.

Jan. 3. — From Zăpŏtlān to Guadalajara, ten leagues.

The moment that we left the barranca in which Zapotlan lies, we lost sight of the luxuriant vegetation by which the Pueblo is surrounded. The fields resumed their old brown colouring; maize stubbles

followed each other in endless succession; and the Table-land, with its usual characteristics, extended once more around us.

We breakfasted at the village of Puente Grande, a magnificent bridge with twenty-six arches, thrown over the River Lerma, or Rio Grande de Santiago, six leagues from Guadalajara, and four from Zapotlan. The breadth of the river at this point is very considerable, and the volume of water in the rainy season great; but during six months of the year the greater part of the bed is dry; and from this uncertain supply, as well as from the masses of rock brought down by the waters during the periodical rains, I should conceive that any attempt to render the Rio Grande navigable would be attended with much difficulty. Many, however, regard it as the future medium of communication between the Băxĭŏ and the Pacific, and look forward confidently to the time when Mexican flour, exported by this channel, will replace that of Chile in the markets of Lima and Gŭyăquīl. Without deciding upon the practicability or impracticability of this plan, it is only necessary to say, that Mexico must be in a very different state from that in which it now is, before its execution can be attempted. The work must be the work of a highly prosperous and populous country, and not of one in which the elements of prosperity are only beginning to develope themselves. It, therefore, certainly does not belong to the period embraced in my present work, although, in 1927,

its advantages may perhaps be descanted upon by some future Mexican historian.

I remained a long time at the Puente behind the rest of my party duck-shooting, and should probably have passed the morning there, had I not received a letter from Mr. Ritchie, an English merchant of great respectability established at Guadalajara, who had had the goodness to offer us lodgings in his house during our stay in the town—written in haste, to inform me that the principal authorities of the State were coming out with him to meet us at the village of San Pedro. I instantly took the road to that place, but did not reach it until long after the carriage, and found a numerous party assembled, who had been waiting some time for us. Zacatecas had spoiled us for such civilities, or, at least, left us totally unprepared to meet them; and I was not a little ashamed of our appearance, as we took our places covered with dust in the gay carriages brought out for our reception.

The approach to Guadalajara lies across a flat, but rich vega: the town covers a great extent of ground, and the view of it from the Hacienda de Batres (to the South-east,) is very picturesque, although there is no range of mountains for the eye to rest upon in the background. Mr. Ritchie's house, where we arrived between two and three o'clock, is situated in one of the principal streets, and, large as our party was, his hospitality found means to provide a lodging for us all. The servants

and mules alone were sent to an inn, which, from what I saw of it, appeared to be particularly bad.

The State of Jalisco, or Guadalajara, commences, as has been already mentioned, a little to the Westward of Aguas Calientes, and occupies the whole intervening space from that town to the shores of the Pacific.

This extensive territory is divided into eight "Cantones," or districts; (Guadalajara, Lagos, La Barca, Sayula, Etzatlan, Autlan, Tepic, and Colotlan;) and these, again, are subdivided into twenty-six departments, (*departamentos*,) containing in all 318 Pueblos, 387 Haciendas, and 2,534 Ranchos, with a registered population of 656,830 souls. Before the separation of the district of Colima, which has chosen to become a Territorio de la Federacion, (that is, to place itself under the immediate inspection of the Supreme Government,) Jalisco contained eight hundred thousand inhabitants. The number does not now exceed that given by the census; as the Government, convinced of the inexactitude of the returns transmitted by the Ayuntamientos, has added to them one-sixth for unavoidable deficiencies.

The population of the Capital, in 1823, was 46,804; but it has increased materially since that time, and in 1827 was supposed to amount to nearly sixty thousand souls. The town itself ranks as the second city in the Republic, and although its claim is disputed by La Puebla, it is, I think, fairly entitled to the appellation. The streets, however, are

melancholy and deserted, most of the lower orders being occupied in their own houses, where they exercise various trades in a small way, as in San Luis. They are good blacksmiths, carpenters, silversmiths, and hatters, and are famous for their skill in working leather, as well as in manufacturing a sort of porous earthenware, with which they supply not only all Mexico, but the neighbouring States upon the Pacific. This is made partly in Guadalajara, and partly in the two villages of San Pedro and Tŏnălā, where the inhabitants have no other occupation. Rebozas and Tapalos, (shawls of striped calico, much used by the lower orders,) are made in considerable quantities; as were formerly Mantas (blankets); but this branch of trade, after suffering much in 1812, when the port of San Blas was opened by General Cruz, has been destroyed entirely by the late importations from the United States, smuggled in through Tampico, Soto la Marina, and Refugio, on the Eastern coast.

Guadalajara derives at present little or no advantage from its foreign trade, San Blas being nearly abandoned as a port, in consequence of its natural inferiority to Măzătlān and Guāymăs, as well as of the vexatious conduct of the Custom-house officers there; upon which subject I have already given all necessary details in Section V. Book III.

Foreign goods are introduced overland from San Luis or Mexico. There is but one foreign mercantile house in the capital, (that of Mr. Ritchie,) and

three at Tĕpīc; and it is probable that even these will soon be obliged to seek an establishment farther North, unless the opening of the ports of Manzanillo and Navidad, (hitherto little frequented,) should give a new impulse to the direct trade.

With so large a population, the revenues of the State of Jalisco might be very considerable; they have not, however, proved sufficient to cover its expences. This is owing chiefly to the abolition of the Alcavalas, in lieu of which a Contribucion directa, or income-tax, was established by the Congress, at the suggestion of the late Governor, Don Prisciliano Sanchez. The measure was so unpopular, that the amount raised never exceeded 230,000 dollars; and to supply the deficit, some of the old alcavalas were re-established in addition to the income-tax: even with this, the contingent, amounting to 365,000 dollars a year, is not covered, and the State is 108,000 dollars in arrear with the Federation. The annual expences of the Government are 200,000 dollars, including the salaries of the Governor and vice-Governor, with eight Gefes Politicos, who preside over the eight Cantons, thirty deputies, and eight senators, each of whom receives a salary of 3,000 dollars.

To cover these charges, there are, in addition to the branches of the revenue already mentioned, the fourth of the tithes, which averages annually from 85,000 to 90,000 dollars: the produce of the tobacco manufactory, not yet well organized, and the municipal duties, which are large, besides the three per

cent. on foreign goods. These altogether produce only 500,000 dollars; though the revenues from 1812 to 1821 amounted to four millions annually. At that time, however, San Blas was the only port in the whole Mexican territory, besides Vera Cruz, open to foreign trade; and consequently the duties upon goods intended for the consumption of the Northern States, which now supply themselves through their own ports, accumulated in Jalisco.

The mines of Guadalajara, with the exception of those of Bolaños, which I was very sorry not to be able to visit, are of less importance than those of the other Central States. Bolaños is situated in a barranca, the lowest part of which is only 3107 feet above the level of the sea. Of the works carrying on there, I have already given a description (Book VI. Section II.), to which I can make no additions. At Comanja, another district, between Lagos and Leon, the United Company has contracted for the mines of Diamantillo and Guardarraya, which, from Mr. Alaman's account, may be regarded as a mere experiment. The principal vein of Cŏmānjă is considered to be a prolongation of the Veta Madre of Guanajuato; but since the expulsion of the Jesuits, who worked the famous mine of Los Remedios there, it has been little explored. The Sierra of Comanja is partly volcanic and partly trapp. Besides silver, it abounds in magnetic iron, lead, and tin; but the Pueblo itself was entirely destroyed during the war,

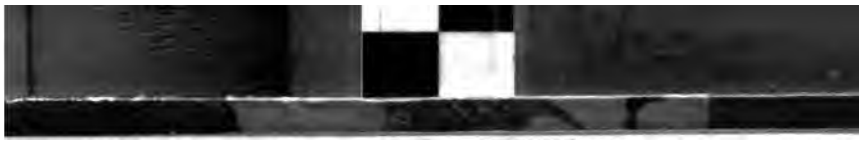
and the mineral riches in its vicinity are seldom explored.

In the *Tierra Caliente*, between Guadalajara and Tepic, there are likewise some "minerales" hitherto but little worked. Of these, the only one of importance appears to be Tlōstŏtīpăqūillo, where the mines of Colonel José Chiafino appear by papers, with which Mr. Ritchie was so good as to furnish me, to have yielded from 1806 to 1810 a clear profit of 234,932 dollars, and from 1820 to 1824, 268,143 dollars. They are now abandoned, in consequence of the death of the proprietor.

Jalisco is undoubtedly the State in which Republican ideas have made the greatest progress, but I doubt whether the violence of the attacks directed against every thing connected with the former system has not produced in some respects a detrimental effect. The liberty of the press has degenerated into licentiousness; and the wish to weaken the influence of the clergy, (all powerful in a city so long the seat of a wealthy Bishoprick,) led the late Governor into a contest, in which he appeared at last as the avowed advocate of atheism.

As in Durango, the intervention of the Supreme Government was found necessary, in order to prevent the too great eagerness with which ecclesiastical reforms were pushed by the liberal party, from being productive of very serious consequences. By the seventh Article of the Constitution of Jalisco, the

State sequestered the whole property of the church, and undertook in return to make an adequate provision for the ministers of religion. This measure was strenuously resisted by the Cabildo, which even went so far as to threaten the Congress and Governor with excommunication, if they persevered in their attempt to enforce it. The point of right was referred, at last, to the General Congress, which decided that the ecclesiastical authorities could not legally be called upon to take the oath of fidelity to the new code, upon conditions so detrimental to their own interests. The Constitution was accordingly sworn without the Seventh Article, (which, however, is still retained as a part of the printed text,) and this prudent resolution put a stop, for the time, to all farther innovation. Enough had been done, however, to excite a spirit of inveterate hostility between the Ecclesiastical and Civil Authorities, and, up to this day, the contest has been continued. The Governor, Don Prisciliano Sanchez, died a short time before I reached Jalisco, in a state of excommunication, as one of the editors of the Astro, the paper in which the doctrines, to which I have already alluded, were promulgated; and his successor, Don Antonio Cumplido, is, I believe, involved in the same sentence. All the advocates of moderate church reforms in Mexico regret this state of things in Guadalajara. The authorities, by their conduct, have given the Cabildo but too fair a plea for crying down every attempt at innova-



tion as a heresy; and although I am inclined to think that the influence of the Church is decreasing rapidly, it has still a great hold upon the minds of the people, and might, if driven to extremities, prove a dangerous enemy to the tranquillity of the country.

On every point not connected with religion, the Government of Jalisco has shown a most laudable anxiety for the improvement of public education. Schools have been established in every part of the State, and placed under the immediate superintendence of the Political Chiefs. By an article of the Constitution, those, who, after the year 1840, are not able to read, will lose the right of voting at the elections. In the capital, a college is established at the public expence, upon the most liberal footing. Professors of anatomy and modern languages (both Frenchmen, and clever men,) have been engaged at a salary of 2,000 dollars per annum. A professor of mineralogy from Freiberg is shortly expected, and Mr. Jones (son-in-law of Mr. Lancaster) has been appointed to superintend the Lancasterian system throughout the State, with a similar return for his services. A magnificent building is set apart by Government for this new institution, and lectures were to commence there the week after my departure.

The town of Guadalajara is handsome, the streets airy, and many of the houses excellent. There are fourteen plazas, or squares, twelve fountains, and a

number of convents and churches, the principal of which (the cathedral) is still a magnificent building, notwithstanding the destruction of the cupolas of both its towers in the great earthquake of 1818.

The Alameda, or public walk, is very prettily laid out, for the trees, instead of being drawn up in battle array, in straight lines, intersecting each other at right angles like the streets, are made to cover a large tract of ground in irregular alleys, while in summer the whole open space is filled with flowers, particularly roses, which give it a very lively appearance. There is a fountain, too, in the centre, and a stream of water all round. Within the town, the Portales are the principal rendezvous, as, besides a number of handsome shops, well provided with European and Chinese manufactures, they contain a variety of stalls covered with domestic productions, fruits of all kinds, earthenware from Tŏnălā, shoes in quantities, mangas, saddlery, birds in cages, "dulces" of Călăbăzātĕ, and a thousand other trifles, for which there seems to be an incessant demand. As each of these stalls pays a small ground-rent, the convents to which the Portales belong derive from them a considerable revenue. They are the counterpart of the Părĭān in Mexico, but infinitely more ornamental, being built with equal solidity and good taste.

Guadalajara possesses a mint, and four printing-presses, all established since the Revolution. The mint is under the direction of an Englishman, Mr.

Murray, whose history is a curious instance of the unexpected turns which a man's fate may take in life, without his own free agency being at all consulted. He was taken prisoner at the siege of Gibraltar, as a midshipman in the British service, and conveyed by the vessel which captured him direct to Lima, where, according to the usual policy of the Spanish Colonial Government, he was kindly treated, but desired to give up all idea of ever seeing Europe again. Being very young, he changed his religion, and finding escape impossible, he worked his way in the Spanish service, until being transferred from Peru to Mexico, he obtained his present situation, which he has held since 1812. He is much respected, and in very comfortable circumstances: of his former connexions he knows nothing, and he has so nearly forgotten his native language, that he thinks it useless to institute inquiries which might bewilder and perplex him, without adding in any way to his prospects of enjoyment during the remainder of his life.

We remained at Guadalajara from the 3d to the 7th of January, during the whole of which time we met with every sort of civility and kindness from the authorities, as well as the principal inhabitants of the place. The Gefe Politico, Don Francisco Duque, and Don Joaquin Parres, the military Commandant, furnished me with a great deal of useful information, as did Don Antonio Gutierrez y Ulloa, a most intelligent and gentlemanlike Spaniard, for many

years Intendant of the State. It was under his administration that the receipts amounted annually to four millions of dollars, (from 1812 to 1818,) out of which the whole expences of the army of General Cruz were covered, and all other charges defrayed.

Of the Canons, (mostly old Spaniards,) we saw nothing. Their influence is thought to be upon the wane, and the "Liberals" of the capital declare, that had they not been fettered by the decrees of the Supreme Congress, Jalisco would have given a memorable example to the rest of the Federation, and humbled the pride of the clergy at once. Upon this subject I have already expressed my doubts. It must be admitted, however, that their authority is by no means what it was. Iturbide threw himself into the arms of the high church party, which could not prevent him from being driven from the throne; and amongst the middling classes of society, a disposition to question the authority of the church, even in spiritual affairs, is daily gaining ground. In temporal matters, we have seen that it is rejected altogether. If you ask any young man of the present day in Guadalajara what his religious principles are, he will tell you that he is a "naturalista," that is to say, of no religion at all. Nor is it surprising that such tenets should spread, when the disgraceful mummeries are taken into consideration, by which the friars in particular endeavour to maintain their influence over the minds of the lower orders. At

Zacatecas, we saw, on Christmas eve, a figure of our Saviour paraded through the streets, dressed in a green silk robe, with a pañuelo del sol,* fastened across the shoulders; while the Virgin Mary followed, adorned with a fashionable French hat, put on a little on one side.

These images the poor are taught to worship: the rich, or rather the well-informed, may bow the knee indeed, but they deride in private the superstition with which they are compelled outwardly to conform; and religion itself shares in the feelings, which such disgusting exhibitions are but too well calculated to excite.

On the 7th of January we quitted Guadalajara, and slept at Ătĕquĭzā, a Hacienda eleven leagues from the town, very prettily situated, near a vast plain of *sembrados de trigo*, (young wheat,) which had been just laid under water, and was of the most delicate green that it is possible to imagine. The Hacienda contains thirteen "sitios," and the lands are mostly "de riego," (irrigated,) but the increase of wheat seldom exceeds thirty to one, and does not average more than twenty-five. We were received with much hospitality by the proprietor, an acquaintance of Mr. Ritchie's; and remained till late in

* A large white handkerchief, worn, in the manner described, by the Rancheros, to protect the back from the sun. The impropriety, or rather impiety, of using it in a religious festival requires no comment.

the evening seated in an open corridor, enjoying a temperature unknown in the central provinces even during the hottest months.

On the following morning, (January 8th,) we left the high road to La Barca, by which our carriage and baggage mules proceeded to Ŏcŏtlān, and struck across the mountains nearly due West, to the camp of Tlăchĭchīlcŏ, (four leagues from Ătĕquĭzăˊ,) upon the borders of the Lake of Chăpālă. This magnificent lake is laid down in Humboldt's map as little known, and the distance from Guădălājāră is likewise made to appear much greater than it really is. It is therefore easy to reach Tlăchĭchīlcŏ in one day, the distance not exceeding thirty, or at most thirty-five miles. A little above this place, which was a military station during the Civil War, the immense basin of Chăpālă opens upon the view. It is from thirty-six to forty leagues in length, and varies from five to eight leagues in breadth: the surrounding mountains are barren, but bold, and descend at once to the water's edge, while the Island of Mĕscālă, nearly opposite Tlachichilco, serves as a point of repose, upon which the eye rests with pleasure in traversing this vast expanse of deep blue water. This island, which is now used as a Presidio, or public prison, was occupied during the years 1811, 1812, and 1813, by the Indians from the surrounding villages, who, headed by their Curas, declared in favour of the Independent cause, and maintained themselves in this strong position against all the efforts of General

Cruz (then commanding in Guadalajara) to dislodge them. They were well provided with canoes, and made frequent incursions from their stronghold into the surrounding country, cutting off isolated detachments of the royal troops, and returning loaded with provisions to the lake, before a force could be assembled to attack them. Nor was their reduction effected until 1814, when a number of gun-boats having been built at Tlachichilco, all communication with the shore was cut off; and after repulsing several assaults, they were compelled by famine to capitulate.

We embarked on board one of these gun-boats, which is still in good preservation at the camp, after breakfasting with the wife of the Commandant (La Señora Rodriguez) upon the Pescado Blanco, for which Chăpālă is celebrated. This fish is found in most parts of the Table-land, but it does not attain so large a size in the lakes about the Capital, as in those of Pāscuărŏ and Chăpālă, from whence, upon great occasions, it is sent express to Mexico, slightly sprinkled with salt, or preserved in snow. I was glad to be able to furnish Madame Rodriguez in return, with a quantity of the water-fowl, which abound upon the edges of the lake, but are seldom tasted by the natives, as they have no guns that will kill a duck at fifty yards from the shore.

We sent our horses to San Pedro, an Indian village three leagues from Tlăchĭchīlcŏ, and proceeded there ourselves by water, stretching half across the

lake, in order to get a better view of Měscălă, where we regretted not having time to land. San Pedro is situated upon the steep ridge which separates Chăpălă from the Valley of Ŏcŏtlān, through which the Rio Grande pursues its course. The view of the lake from the height called La Coronilla, is almost equal to that of the Lake of Geneva from the mountains above Vevay. Its vast extent, its form, the bold outline of the surrounding mountains, and the clear blue of the sky above, render it a very striking scene, and one to which few pencils could do justice.

From San Pedro to the banks of the Rio Grande, at the point where it reissues from the Lake of Chapala, which it enters near La Barca, we calculated the distance to be about five leagues; the two first mountainous, the three last over a level plain, which we crossed at a rapid passo. Even at this pace we could hardly keep our guide (an Indian runner, from San Pedro) in sight. He continued at a very fast trot over every sort of ground, now disappearing in a barranca, and now half seen, in the obscurity of the evening, fifty yards before our horses' heads, until we reached the ferry, to which he had promised to conduct us. Ŏcŏtlān is situated upon the Southern bank of the river, a broad and rapid stream. We found the passage not unattended with danger; for, as we had but one servant with us, Mrs. Ward, Mr. Martin, and I, were seated in a punt just large enough to contain us, guided by a man with a pole not sufficiently long to reach the bottom in the

deepest parts. We each held a horse by a lasso, while the saddles and bridles were piled up between us; the servant remained upon the bank to force the animals to enter the water, which, as it was dark and cold, they did with great reluctance; and when they got into the middle, not discovering the opposite bank, they began to swim in different directions, and very nearly upset the boat. More than half an hour elapsed before we were all landed; and Mr. Carrington, who had gone on in the morning to superintend the passage of the baggage mules and the coach, told us that it had taken nearly four hours to accomplish it. I had bought at Sōmbrērētĕ sixteen Durango mules, from the Hacienda del Ojo,—beautiful creatures, but perfectly unbroken, and so nimble in all their motions, that if they chose to separate from their companions, we had hardly a horse fast enough to come within lassoing distance of them while in full career. Frightened at the water, these beasts spread on every side; and it was only by collecting some rancheros to assist the servants, that Carrington was enabled at last to force them into the stream, which was done by closing gradually in upon them with loud cries, and lassos whirling in air, until one more courageous than its companions plunged in, and was followed instantly by the rest.

I know few instances in which the utter inutility of English servants for Mexican travelling would have been better exemplified than in the attempt to

break these mules. Not one of them had ever been in harness before, yet they drew our coach the whole way from Sōmbrĕrētĕ to the capital. The first few days, the operation of catching them was really tremendous. The mules were driven into a corral, or large inclosure, and two lassos affixed in turn to each, one to the neck, and the other to one of the hind legs. Each of these was held by two men, while, after allowing a little time for the animal to exhaust itself in unavailing efforts, a fifth approached, and with infinite precautions placed a leather bandage (the Tapa ojos) over the eyes, and then proceeded to put on the rest of the harness. During this whole process, the struggles of the mule are fearful; and, even when convinced of the impossibility of escape, I have seen them groan and bellow in an agony of impatience, and try to destroy, with their teeth and fore-feet, whatever came within their reach.

One by one, however, they were led forth and attached, still blindfolded, to the coach, the wheelers and leaders being always steady old mules, while the four new comers occupied the intervening space; the Tapa ojos was then raised, and they went off usually at full speed, until the nature of the road, or the resistance of their more prudent companions, induced them to moderate their pace. We never met with an accident of any consequence in the course of these proceedings, or in the operation of

breaking the mules for the saddle, which was conducted in a similar manner.

The bad riders amongst the servants used to get some terrible tumbles, and they were occasionally carried up and down a barranca in rather awkward places, but no limbs were broken; and as each was laughed at in turn, the most perfect good humour prevailed; while the mules were so far subdued by constant work, that between Valladolid and Mexico they gave us comparatively but little trouble.

We rejoined our party at the Hacienda of Săn Ăndrēs, three miles from the river, where Mr. Carrington had got a lodging for us, there being no inn at Ŏcŏtlān; and, on the following morning, (Jan. 9,) we proceeded to La Barca, where we arrived at an early hour, the distance being only eight leagues.

La Barca is the head of a "Canton," containing four "departamentos," with 96,178 inhabitants. The town is uninteresting, and only worthy of remark as being the last place visited by us in the State of Jalisco, which is divided there by the Rio Grande from the neighbouring States of Guănăjūatŏ and Vāllădŏlīd. Our road lay through the last of these, and we consequently sent our carriage and mules over in the evening of our arrival. During this process, which occupied four hours, I went to shoot in the great Cienega, or marsh, which commences a little to the Westward of La Barca, and extends in a line with the river almost as far as the

Lake of Chăpālă. I found there a prodigious variety of every species of water-fowl,—wild ducks, geese, swans, bitterns, and herons, some of enormous size, with many others, the notes and plumage of which were equally new to me. I tried in vain to get within shot of some of the larger kind, for my progress was interrupted, at almost every step, by deep canals, or impassable swamps. At last, however, by the advice of my Indian guide, I embarked upon a large bundle of rushes, which, though soon waterlogged, still supported my weight very tolerably, for a considerable distance, while he accompanied me upon another equally primitive conveyance. By this means I contrived to shoot several ducks and a couple of wild geese; but when I wished to return with my booty, I found the attempt by no means easy. A strong current was setting towards the lake, and every attempt to propel our rush rafts in a contrary direction had the effect of immersing them still more deeply in the water; until at last, wet up to my middle, and with every prospect of sinking still lower from the quantity of water that my rushes had imbibed, I was forced to land, and to take a round of nearly two leagues, in order to avoid the marsh, and to reach La Barca, where I did not arrive until a very late hour.

Jan. 10.—To Chĭrĭnghūichărŏ, fourteen leagues.

We crossed the river early, and proceeded by Buena Vista (a large Hacienda) and the Pueblo of Tăngūato to Chirĭnghūichărŏ, having been led to believe

that by avoiding Zămōră (the usual road), we might reach Vāllădŏlīd one day sooner. From the time that we approached Tăngūatŏ, we began to remark a sensible improvement in the appearance of the country: there was more variety in the shape of the mountains, more wood, more water, and a richer vegetation. The cottages too, though small, were neat; the people cleanly and civil. A little beyond Tăngūatŏ, we found a very pretty lake, extending, with occasional interruptions, for nearly two leagues; it was full of little islands, covered with acacias, and abounding with wild-fowl of every description, while large herds of cattle occupied the potreros in the vicinity of its banks.

Having loitered with Mrs. Ward behind the rest of the party, which had struck into a different road, we stopped at a small hut to breakfast, where a pretty Indian woman, with a beautiful set of teeth, gave us some tortillas, with eggs, frijoles, chile, and a little meat for ourselves and two servants, for four reals. She was exceedingly communicative, and told us that her house, on setting out in life, had cost her *four* dollars, and her marriage fees *twenty-two:* that her husband had paid this, but was still in debt to the Padre for the baptism of a child, the fees for which he was then endeavouring to raise. We gave her a few reals towards so laudable a purpose, and left her highly pleased with our visit, as we were with her simple manners and conversation.

We found only the remains of a house at Chiring-

huicharo, the Hacienda having been burnt during the Revolution: we, however, fitted up two very tolerable apartments in the corridor with blankets and cloaks, in which, as there was not much wind, we passed the night without discomfort.

Jan. 11.—To Tlăsĕsālcă, ten leagues.

This day's experience effectually convinced us of the folly of taking cross-roads with a carriage. It was our intention to sleep at Cĭpĭmĕŏ, another Hacienda, put down in our route as a very feasible distance; but after reaching, about two o'clock, the Hacienda of Chāngĕtĭrŏ, we found our farther progress impeded by a succession of inclosures, through which it was necessary to force our way by opening breaches in the thick stone walls large enough to admit the carriage. Fortunately, Mexicans have a great talent for demolition; and the servants, who all went to work *con amore*, soon opened us a passage; but after continuing the work till six o'clock, during which time we had made our way through six or seven inclosures, we found ourselves at dusk upon the top of a hill immediately above the Pueblo of Tlăsĕsālcă (ten leagues from Cĭpĭmĕŏ), where we resolved to pass the night. To reach it was no easy task, as the descent consisted entirely of fragments of rock, over which it seemed impossible that a carriage should find its way unbroken. From this dilemma we were extricated by a Vaquero, who offered to show us a winding path, through which he had once conducted the Insurgent artillery during the

Revolution. We gladly embraced the proposal, and arrived safely in the Pueblo, by a very circuitous route, about seven o'clock, where we succeeded in obtaining accommodations for the night.

On the following morning (Jan. 12) we pursued our journey, and reached Cipimeo (ten leagues) at an early hour in the afternoon. The road was very rugged, but the country exceedingly pretty, the vast plains of the Interior being replaced by a pleasing variety of mountain scenery. The weather however was cloudy, and in the pine-forests we all felt the cold severely. The central part of Valladolid is raised above the level of the surrounding country—being situated upon that part of the Sierra Madre where the descent to the Western coast commences, and where a succession of broken and lofty ridges interrupts the uniformity of surface peculiar to the Table-land. The valleys between these ridges abound in water, and are exceedingly fertile; while the mountains that environ them are covered with a fine growth of timber. In one of these valleys the Hacienda of Cipimeo is situated, formerly one of the most valuable in the State of Valladolid, but now only just beginning to recover from the effects of the Civil War. The present proprietor, Don José Maria Torres, was an officer in the Creole army in 1810, and his father was instrumental in saving the lives of twenty Europeans residing in Patzcuaro, against whom Hidalgo had fulminated one of his iniquitous decrees of proscription. These offences

drew upon the family the ill-will of the first Insurgents; and the estate was so continually laid waste, that for some years it was entirely abandoned.

The Hacienda possesses a great extent of woodland,—ground sufficient for sowing 400 fanegas of maize, the whole of which is irrigated—rich and abundant pastures—and a plentiful supply of water. A river passes through the estate, and Cienegas, or marshes, (very valuable for cattle during the dry season,) extend for some leagues around. In front of the house there is a singular volcanic mountain, the crater of which forms an "Alberga," or natural lake. The water commences about 200 feet from the edge of the crater; it is salt; and no attempt to find a bottom has yet proved successful.

The basin in which it is contained is perfectly circular, and the descent to the water's edge almost precipitous: the distance across must be 200 or 250 feet. From a little above the "Alberga" we had a fine view of the surrounding countries; and Mr. Torres pointed out to us the marsh, in the centre of which the fort of Jăuxīllă stood, once the seat of the only independent government of which Mexico could boast.

Jan. 13.—From Cĭpĭmēŏ we proceeded to Tĕcāchŏ, (twelve leagues,) a Hacienda and Venta, which was to be our last stage on the way to Vāllădŏlīd.

The road continued to be exceedingly picturesque, being surrounded by hills, some of the most fantastic shapes, while others, though isolated, looked

as if they had been cast in the same mould. In passing the marshes I killed nine ducks, and brought down two wild geese at a double shot, as they rose out of some rushes near the road. We found them most excellent eating, and regretted that it was not possible to add them more frequently to our bill of fare; but, except by a chance shot, it is extremely difficult to obtain so great a prize. In the lakes of the valley of Mexico they are seldom seen, though ducks, snipes, and bitterns, are found there in prodigious numbers. I have frequently shot twenty and thirty snipes in a morning; and a great *tiro de patos* near Mexico is one of the most curious scenes that it is possible to witness. The Indians, by whom it is principally conducted, prepare a battery composed of seventy or eighty musket barrels arranged in two rows, one of which sweeps the water, while the other is a little elevated, so as to take the ducks as they rise upon the wing. The barrels are connected with each other, and fired by a train; but the whole apparatus, as well as the man who has charge of it, are concealed in the rushes, until the moment when, after many hours of cautious labour, one of the dense columns of ducks, which blacken, at times, the surface of the lake, is driven by the distant canoes of his associates sufficiently near to the fatal spot. The double tier of guns is immediately fired, and the water remains strewed with the bodies of the killed, and the wounded, whose escape is cut off by the circle of canoes beyond.

Twelve hundred ducks are often brought in as the result of a single tiro; and during the whole season they form the ordinary food of the lower classes in the Capital, where they are sold for one, or at most two reals each.

In the North I saw no such masses of ducks, but they were replaced by wild geese, swans and cranes, with herons of a prodigious size, in flocks that covered a vast extent of country when they alighted, and filled the air with discordant screams when on the wing. I never could succeed, however, in securing any of the larger birds, as they were so extremely wary that it was difficult to approach them even within rifle shot.

Jan. 14.—We left Tecacho at seven, and reached Valladolid (twelve leagues) at half-past three.

There was nothing on the way to announce that we were either upon a high road, or approaching the Capital of a flourishing State. A few wretched hovels, at one of which we stopped to breakfast, and two or three miserable arrieros, were the only objects that reminded us of the presence of man. The forest scenery, however, was fine, and we saw occasionally some stupendous masses of lava, looking as fresh as if they had been produced by a very recent eruption. The frequent recurrence of these volcanic remains is a singular feature in New Spain; for since the Conquest there has not been a single eruption of any consequence, (excepting that of Jorullo,) and most of the volcanoes now known are

extinct. Yet masses of scoria, and districts covered with lava, are found in every part of the Federation; in the vicinity of the Capital, on the road to Guanajuato, in parts of San Luis, between Sombrerete and Durango, throughout Valladolid, and on the ascent from Veracruz, between Jalapa, Jilotepec, and Las Vigas, as well as in the plains of Tepeyagualco; while everywhere their vast extent proves that the convulsions which produced them must have been fearful indeed.

I know few places the approach to which is so tedious as that to Valladolid. For more than two hours you see the city apparently below you, while the road continues to wind amongst the surrounding hills. At length, a rapid descent conducts you to the plain, where a long causeway built across a marsh forms the entrance to the town. The suburbs are poor and insignificant, but the high street is fine, and the Cathedral, standing alone and unconcealed by any subordinate buildings, produces a very imposing effect.

Not having any acquaintances in Valladolid, we took up our quarters at the inn of Nuestra Señora de la Soledad, where we obtained very decent apartments, with tables, chairs, and a number of other luxuries, not at all general as yet in the Mexican Republic.

The State of Michoacan comprises the territory formerly belonging to the Tarascos, a powerful Indian nation, first allies, and afterwards rivals of the

Aztecs, whom they are said to have followed in their emigration from the North. Their capital was situated upon the banks of the Lake of Pātzqŭarŏ, called by them Tzinzunzan, from the number of humming birds (Tzinzun) in its vicinity, with the feathers of which the statues of their gods were adorned.* Driven into the mountains by the persecutions of their conquerors, the Indians led a wild and barbarous life, until they were reclaimed by the exertions of Vasco de Quiroga, first Bishop of Valladolid, who devoted thirty years of his life to the mitigation of the evils, which the ambition of his countrymen had brought upon the aboriginal race. The Bishopric was created in 1536, and held by Quiroga until 1565, during which time the valleys were once more filled with inhabitants, and the natives distributed into villages, where they have continued ever since to cultivate the lands assigned to them by their protector; and, in some instances, to exercise the trades, in which he caused them to be instructed.

The registered population of the State in 1822, was 365,080 souls. It may be calculated at 450,000 at the present day, adding one-sixth for omissions, and making some additional allowance for the inhabitants who have returned to their homes

* The Indians of Patzquaro are still famous for this art. They compose figures of saints with the feathers of the Colibri, which are remarkable both for the delicacy of the execution, and the brilliancy of the colours.

since the re-establishment of tranquillity, Valladolid being one of the provinces that suffered most during the Civil War. It has been justly termed the cradle of the Revolution; most of the proprietors are old Insurgents; and, with the exception of the Congress assembled by Morelos at Oaxaca, all the governments successively established by the Independent leaders (the Junta of Zĭtācŭarŏ, the Congress of Ăpătzīngăn, and the Junta of Jăuxīllă) sought a refuge in the territories of Mīchŏăcān. The result was almost universal desolation, and many years will still be required to repair the wide-spread ruin, which so protracted a struggle has occasioned.

Valladolid contains two cities, (Ciudades,) (Pātzcŭarŏ and Vallădŏlīd,) three towns, (Villas,) 256 Pueblos, 333 Haciendas, and 1356 Ranchos, distributed into eighty-three parishes, and twenty-one "Partidos," or districts.

The legislature consists of one chamber, composed of eleven deputies, who receive a monthly salary of 150 dollars, during the sessions only. The whole expences of the Government do not exceed 120,000 dollars. The contingent amounts to 175,000 dollars, of which one-half remained due for the year 1825. The reduced contingent of 1826 was paid.

From the universal distress occasioned by the Civil War, the revenue of Michoacan, in 1827, was still very inconsiderable. The former riches of the State consisted almost entirely in its agricultural

produce, the most ordinary manufactures being introduced from the neighbouring towns of the Băxĭŏ. The Pueblos have now so little to give in exchange for these supplies, that the Alcavalas (or excise upon home-made goods) yield little or nothing. A contribucion directa, calculated at two reals a-head, has never yet produced 20,000 dollars; and even for tobacco the demand is very trifling. The tithes, one moiety of which belongs to the State, formerly produced 500,000 dollars; they now yield only 200,000 dollars; nor is there any immediate prospect of an increase, as their falling off is attributed not only to the depressed state of the agricultural interests, but to the dissemination of ideas unfavourable to the rights of the Church, which are gaining ground every day.

The only mines now in activity in Michoacan are those of Tlālpŭjāhŭa, Ŏzūmătlān, and Angangeo. There are many other districts said to be rich in the Sierra Madre, and the mines of Huĕtāmŏ, amongst others, have excited the attention of some of our Companies; but it does not appear that their value is sufficient to compensate for the disadvantages of a scanty population, and a very unhealthy climate. The whole Western declivity of the Sierra Madre comprehended within the province of Michoacan is remarkable for its insalubrity. Agues of the most dangerous kind prevail there during a great part of the year, and the inhabitants are afflicted not only with wens, (as in parts of Sonora,) but with

the disease called Quiricua, a sort of leprosy, which discolours the face and body with large blue splotches, without otherwise affecting the health of those attacked by it. The principal seat of the disorder is in the valleys between Témăsçāltĕpēc, Huĕtāmŏ, and the Coast, where nearly the whole population is composed of "Pintos;" the affection is said to be contagious, and spreads gradually towards the interior, so that a mottled race may probably be propagated into the very vicinity of the Capital.

The *Tierra Caliente* at the foot of the Cordillera, which is fertilized in part by the Rio Balsas, is rich in all the ordinary productions of the tropics; and even in the more elevated valleys, sugar was grown before the Revolution to a very considerable extent. The best sugar lands are now about twelve leagues South of Pāscuărŏ, where the proprietors of almost all the sugar estates reside; but only a small portion of the machinery destroyed during the war has been yet replaced. At the foot of the mountain of Jŏrūllo, there are some plantations of cacao and indigo belonging to General Michilena, but they have not yet attained any considerable value, or extent.

Nearly all the public edifices, not immediately connected with the Government, in Valladolid, are due to the munificence of the bishops of that See, most of whom have contributed to enrich, or adorn, the town. The cathedral, the hospitals, and the aqueduct, are all the works of the Church. The first is a magnificent building, and wealthy, though de-

spoiled of a large proportion of its treasures by the Royal Commandant Trŭxīllŏ, during the Revolution. The massive silver balustrades around the principal altar escaped the fate of the lamps and candelabras, (melted down as a loan to the Royal Treasury,) by being painted the colour of mahogany, which they retain to the present day.

The bishoprick of Mīchŏăcān has been vacant for many years; but I know no place where the recollection of the long line of Prelates who have occupied the episcopal chair, seems to be preserved with such respectful and affectionate regret. Indeed, I have often heard Mexicans, but little disposed to speak well of Spain in any other respect, admit that the conduct of the great dignitaries of their Church has been in general most exemplary. Amongst the Parochial clergy in New Spain, the distance of the livings from each other, and the absence of all control, have led occasionally to a very relaxed state of morals, and converted religion into a cloak for the greatest excesses; but the bishops, in general, have been men of great simplicity, and benevolence, whose primitive habits, and unambitious lives, their Creole successors will do well to imitate.

We left Vāllădolīd on the 16th of January. The view of the town from the Mexican side is really beautiful: gardens and orchards form the foreground, while the lofty aqueduct, the gorgeous churches, and a bold range of mountains behind, fill up the remaining space. Our road lay through Chārŏ, and In-

dăpărāpĕŏ, to Sĭnăpēcuărŏ, where Mrs. Ward and the rest of the party slept. This town is the head of a Partido, or district, containing 25,174 inhabitants, and abounding in the ordinary productions of the Table-land. The name is derived from the Indian word "Tzĭnāpŭ," which, in the language of Otŏmīs, or Tărāscŏs, signifies Obsidian, a great abundance of which is found in the vicinity of the town. By a grammar of the Tarascan tongue in my possession, the language appears to be very far from simple. The alphabet consists of only twenty-one letters, five vowels and sixteen consonants. F and L are not known. The L (as already observed) is particularly prevalent in the Aztec language, while the R, rejected by the Aztecs, is almost universal amongst the Ŏtŏmīs. Yet the two tribes emigrated from the North together, and continued allies, until, from too close a neighbourhood, they became enemies, and were both overwhelmed by the common foe. A pure breed of the Ŏtŏmīs still exists in many parts of Valladolid. They live chiefly in the mountainous districts, and never intermarry with any other tribe.

At Indăpărāpĕŏ, I quitted the high road to the Capital, and struck off across the mountains to Ozūmătlān, a little isolated district, where the Real del Monte Company is working the mines of San Pedro Barreno, Los Apostoles, and La Machorra.

Ozūmătlān is exceedingly difficult of access, the mountains being intersected by immense ravines, and

the paths so little frequented that all trace of them is frequently lost. I succeeded however, with an excellent horse, in making my way to the mouth of a Barranca more than a league in length, towards the upper part of which the village and mines are situated. The mountains on either side are lofty, and clothed with a fine growth of oaks and firs, while a rapid, though shallow, stream occupies nearly the whole of the intervening space. The road winds alternately from bank to bank, until, at a sudden turn, a little platform is discovered, upon which the village stands. The only air-tight house in it is that occupied by the Company, close to the Socabon of San Pedro. The Hacienda built by them stands a little below. It is in the establishment of the reduction works that the principal expence of the Company at Ozumatlan has consisted, for the goodness of the mines had been ascertained by Mr. Dollar, (who had laid out 22,000 dollars upon them,) before they were contracted for. The Hacienda has cost about 35,000 dollars more. It contains a large water-wheel for stamping the ores, and every other requisite for a smelting establishment; this being the only process used in Ozūmătlān, where the ores contain a quantity of lead: and where amalgamation in the Patio would be doubly tedious, on account of the total absence of sun, there being only three or four hours out of the twenty-four, in which its rays can penetrate into the lower parts of the Barranca. At the time of my visit, nine

hundred cargas of very rich ore were already in the magazines; and it was the opinion of the miners, that, as soon as the Hacienda was completed, seven hundred cargas more might be raised weekly from the Socabon of San Pedro alone. The principal vein is nearly four varas in width, and presents every indication of being both abundant, and durable in its produce. The richest ores however, containing massive crystallizations of lead and silver, (some fine specimens of which I saw at Real del Monte,) were raised from a little side vein, which was abandoned after a short trial, being found to continue such a mere thread, (hilito,) that the ores, though exceedingly valuable, would not pay the costs of extraction.

Workmen are easily procured at Ŏzūmătlān; provisions are abundant, and, from its vicinity both to Valladolid and to the *Tierra Caliente* to the South and West, supplies of all kinds may be obtained with facility. But as a residence, the place is dreary beyond description, being completely shut out from the world. The result of the speculation to the Company does not appear to be doubtful; for the ore already on hand in 1827, was thought to be sufficient very nearly to cover the outlay, as soon as the completion of the Hacienda should afford the means of converting it into bars.

Jan. 17.—From Ozūmătlān, I proceeded across the mountains to Sĭnăpēcuărŏ. The road, after emerging from the Barranca, is good for about three

leagues, when an almost precipitous descent leads from the edge of this elevated platform into the valley of Sinapecuaro below. I thought that I should never reach the town, for during a whole hour I saw it below me without being apparently any nearer to it than I was when I commenced the descent. At last we arrived, and, after dismissing my guide, I followed at a rapid passo the road to Mărăvătīo, by which the coach had proceeded, about three hours before me. I overtook the party at Ăcāmbărŏ, (six leagues from Sĭnăpēcuăro, and eleven from Ozūmătlān,) and, after taking some refreshment, and changing my horse, we continued our route towards Mărăvătīŏ, where it was our intention to sleep. We were imprudent enough to loiter some time at Ăcāmbărŏ, in order to see the town, which, though now nearly in ruins, was a place of importance before the civil war; and the consequence was, that we were benighted on our way to Mărăvătīŏ, (the distance being ten leagues,) where, after losing our road, and wandering over the plains for some hours, we did not arrive till near eleven o'clock. To add to our misfortunes, the cook, who had been sent on in the morning to lay in provisions, and get some rooms ready for our reception, seemed to have experienced the same fate. He was not heard of for three days, when he rejoined us at Tlalpujahua, very nearly starved, his horse having thrown him in the mountains, and made his escape, leaving him to find his way, as he could, to some

Pueblo, or village, in search of which he wandered about for thirty-six hours. As a proof of the honesty of the people, I may add that the horse, being known by some of the accoutrements to be English, was brought to me at Tlālpŭjāhŭa by order of an Alcalde, to whom he had been safely delivered.

A case of preserved meat saved us from absolute starvation at Mărăvătīŏ; without it, we must inevitably have gone supperless to bed, as, at so late an hour, not even bread was to be procured.

Jan. 18.—Early on the following morning we set out for Tlalpujahua, accompanied by Mr. Moro, the principal engineer of the Company, who had been good enough to undertake to pilot us across the mountains. The carriage-road leaves the elevated ridge upon which Tlalpujahua stands to the right, and winds almost round it into the valley of Tepetongo, where it resumes the direction of the Capital, while the road to the Real branches off, for about two leagues, up the valley, or Cañada, of Tlalpujahua, which is impassable for any thing but horses and mules.

At the Hacienda of Tĕpĕtōngŏ we were met by Monsieur de Rivafinoli, with a number of Mexicans, and other gentlemen in the service of the Company. They brought us a supply of fresh horses, with carga mules for the baggage, by whose assistance the contents of the coach were speedily transferred to Mr. de Rivafinoli's hospitable house. The children were carried on horseback by two servants; the maids

were mounted in a similar manner; and after a very little delay, the whole cavalcade took the road to Tlalpujahua by the new Hacienda of the Chĭmāl, where we stopped to breakfast. Nothing can be prettier than the approach to the Real upon this side. The scenery varies at every turn in the Barranca, while the abundance of water, and the fine vigorous vegetation of the forests on the surrounding mountains, form a most delightful contrast to the monotonous plains of the Interior, by the recollection of which we were long haunted.

We remained at Tlālpŭjāhŭa two whole days, and I found everywhere proofs of the unwearied assiduity with which the labours of the Association had been carried on. Only four months had elapsed since my preceding visit, yet a sensible improvement had taken place in every direction. Buildings were completed, which I had left uncommenced; machines erected, of which I had only seen the first sketch upon paper; and mines brought into activity, the working of which in September could hardly be said to have begun. The great Hacienda of San Rafael was likewise concluded; and though the amount of valuable ore raised was not yet considerable, the most sanguine expectations were entertained by the natives with regard to the result.

In these expectations, I confess that I myself fully share. I have always regarded Mr. de Rivafinoli's system of management as a model: his activity is unceasing, and his influence over the natives, as well

as over the officers of the Company, unbounded; while the publicity with which every thing connected with the pecuniary concerns of the establishment is carried on, renders it impossible that this influence should be ascribed to any but the real cause; that is, a conviction, on the part of the Mexicans, of the advantages which the whole country has derived from the able manner in which the works of the Association have been conducted. More time has indeed been required to bring the mines into a profitable state than was at first thought necessary; but I trust that the details, of which the preceding books are full, will have had the effect of convincing my readers that, in undertakings upon so large a scale, where the issue is liable to be affected, not only by unforeseen difficulties, but by so many other circumstances, for which, though foreseen, no remedy can be provided, *time* is not the only criterion by which a judgment ought to be formed, either of the probable result of an enterprise, or of the ability displayed in its prosecution. I see, at present, no reasonable motive for discouragement amongst the Tlalpujahua adventurers. Their outlay is moderate; their mines are known to have yielded rich ores; and do so still, wherever the lodes are accessible; and although the district was abandoned for nearly sixty years, (after the removal of La Borde,) it must be recollected, that during those very years the great Bonanzas of San Acasio, (at Zacatecas), and the Păvĕllōn, with the discoveries of Catorce, Guarisamey, and the Va-

lenciana mine, (at Guanajuato, and in the North, naturally diverted into other channels the capitals usually invested in mining discoveries.

The question is not, whether there are richer districts than Tlalpujahua, but whether that district, now that capital and science are employed upon it, will repay the labours of those by whom the investment is made? And to this there is every reason to imagine that, within a reasonable time, a very satisfactory answer will be given.

On the 19th of January we visited the Hacienda of San Rafael, one of the most ingenious and complete establishments, now existing in Mexico. The stamping wheel has been already described. Its effect was really beautiful, and its construction does the more honour to Mr. Moro, because he persevered in his original plan, notwithstanding the discouraging predictions of those, who pronounced its execution to be impracticable.

There was rather a scanty supply of water when we saw it; but this was an evil not to be guarded against in a year, when the maize crops throughout the country had perished for want of rain.

On the 20th we assisted at the "Bendicion" of a new machine for raising the water in the mine of Arevalo, invented by Mr. Seidenstücker, a German "machiniste," who had already given proofs of much ingenuity in his department, and materially improved the machinery of the Company. In the present instance, by inverting the ordinary mode of

applying steam power, and making a rotatory motion produce a vertical one, he expected to put in motion, with one horse, a pump capable of performing the work of two Mălăcātĕs. Monsieur Martin and I had the honour of standing godfathers upon this occasion, for which the Galera was fitted up with a profusion of green boughs, and other decorations. An altar was raised, surrounded by flags of various colours, with all the silver candlesticks of the Church ranged on each side; and the Cura, in full canonicals, pronounced a solemn blessing upon the machine, sprinkling holy water upon every part of it; while the godfathers, with huge wax flambeaux, weighing at least six pounds each, were in close attendance upon his steps. The ceremony concluded by a distribution of wine and cakes, and a general discharge of fireworks, (cŏhētĕs) in the noise of which the Indians take a peculiar delight, although, at mid-day, their effect, as they hiss through the air, is entirely lost in the splendour of the sunshine.

We suffered severely from cold during our stay at Tlālpŭjāhŭa, and not less so on our return to the Capital. We set out on the 21st, and rode across the mountains to the Hacienda of Tĕpētĭtlān, (about seven leagues,) where we were most comfortably provided for by the Administrador and his wife, who welcomed us with that easy politeness of manner, which certainly distinguishes the Spanish race, wherever its descendants are found. The children

performed this long journey on horseback, without experiencing the least inconvenience, so inured had they become to every possible mode of travelling during their three months' wanderings. For their great "Coche" they had formed an attachment, which remains in full force to the present day. They looked upon it quite as their home, and were impatient, in the morning, for the hour to arrive at which they were installed in it, and released from the dulness of a dark and dirty room. Nor had they suffered in any other respect: the eldest little girl, a sad invalid when we quitted the Capital, recovered her health and strength while away; and as to the youngest, she was so fortified by living constantly in the open air, that her fat and rosy cheeks were the admiration of all beholders. Even at Zăcătēcăs, where no kindly feelings were entertained towards the parents, she was visited by a number of friars, who made interest with the Indian nurse to let them kiss her, and carry her about in their arms; and at several other places she and her sister were sent for by people of the town, whose desire to see them Chapita always complied with,—for fear, as she told us, that they might cast an evil eye upon the children, if refused.

We found our coach at Tĕpētĭtlān, to which place it proceeded by the usual coach-road from Tĕpĕtōngŏ. On the 22d, we started at five o'clock, (at which hour the ground was covered with a hard white

frost, and the water with a coating of ice,) and proceeded by Īstlăhūacă to Lerma, where we arrived without any other accident than the loss of two mules, which, having got loose while we were changing the "tiro" of the carriage, made their way to the river, and actually killed themselves by drinking to excess when hot.

We left Lerma on the 23d, about six in the morning, and arrived in Mexico at three, having been much delayed by the carriage, which, I thought, would never reach the summit of Lăs Crūcĕs.

The delight of returning to our beautiful home, after an absence of nearly three months, was great indeed; and the contrast between San Cosme and the villainous abodes to which we had been so long confined, made us regard it as little less than a palace. We were all exhausted too by constant locomotion, having averaged thirty miles a-day during the whole time that we were upon the road. Our horses, which had commenced their expedition fat and flourishing, were reduced to mere skin and bone; yet they all returned; not one knocked up so entirely as to oblige us to leave it behind; and many, after two months of rest, and green forage, recovered their good looks completely, and enabled me to sell them, on my departure, at a very trifling loss. Amongst the mules the damage was more considerable, many of my new purchases having turned out ill; but my original stock returned un-

injured, after carrying their loads the whole way, without a single day's relief.

I have endeavoured to comprehend in the preceding pages all the statistical details of any importance in those parts of the Federation which I visited during my mining tours, (La Pūeblă, Quĕrētăro, Guănăjuātŏ, San Luis Pŏtŏsī, Zăcătēcăs, Dŭrāngŏ, Guădălăjāră, and Vāllădŏlīd,) with such additions respecting the more Northern Provinces as I have conceived to be most worthy of attention, and best entitled to credit.

A few particulars respecting the States of Mexico, and Veracruz, Ŏăxācă, Tăbāscŏ, and Yŭcătān, with some final observations upon the general prospects of the country, will comprise all that my present materials will enable me to subjoin, or indeed that the dimensions of my book will admit of.

The State of Mexico, with a population of nearly one million of inhabitants, is divided into eight districts, Ăcăpūlcŏ, Cūernăvācă, Hŭejūtlă, Mexico, Tasco, Tŏlūcă, Tūlă, and Tŭlăncīngŏ.) These embrace a large proportion of valuable mines, as well as a number of districts celebrated for the richness of their agricultural produce. Rĕal dĕl Mōnte, Chīco, Căpūlă, Zĭmăpān, San José del Oro, El Cārdŏnāl, La Pĕchūgă, the Rancho del Oro, Tāscŏ, Tĕpāntĭtlān, Zacualpan, and Tétēlă del Rīŏ, are all in

the State of Mexico; as are the valleys of Tŏlūcă and Cūautlă Ămīlpăs, the rich plains of Păchūcă, and the fertile Vega of Tŭlăncīngŏ. The capital of the State is Tĕzcōcŏ, Mexico having been declared a Federal City, and selected as the residence of the President, the Congress, and all the great authorities of the Federation. By this decision, the State was stripped of a very considerable portion of its revenue, which consisted in the municipal duties collected at the gates of Mexico; and the difficulty of raising an equivalent for these duties at once, has retarded the acquittal of its debt to the Federation, to which in 1827, 182,712 dollars were still due. But the resources of the State are so ample, that these embarrassments cannot be of long duration.

The Legislative Assembly is composed of nineteen deputies, elected in the ratio of one for every fifty thousand inhabitants. The districts are placed under the inspection of Prefects, and Sub-Prefects, one of whose duties it is to establish schools in every village, and to form a census, as well as a statistical survey, of the territory of the State. But the Constitution having only been published in February 1827, these provisions have not yet been carried into effect.

Veracruz is divided into four "departments," Veracruz, Jălāpă, Ŏrĭzāvă, and Ăcăyūcăm.

The department of Veracruz contains four "cantons," with a total population of 63,106 souls; (Veracruz 29,987, Tămpīcŏ 20,785, Păpāntlă 7,981,

Misantlă 4,353,) distributed throughout the *Tierra Caliente* of the coast in fifty-three "Pueblos," Rancherias, or Congregaciones. The produce of these cantons consists in maize, frijoles, rice, cotton, sugar, woods of the most precious kinds, as mahogany, ebony, and cedar; salsaparilla, pepper, wax ūlĕ, (Indian rubber,) and vanilla, which is particularly abundant in Misantla, where twenty thousand roots of it were planted in 1826.

The department of Jălāpă is divided into two cantons, Jălāpă, and Jălăcīngŏ, containing forty-one Pueblos and 53,061 inhabitants.

Ŏrĭzāvă comprises three Cantons, (Ŏrĭzāvă, Cōrdovă, and Cŏsămălūăpām,) with sixty-three Pueblos, and 84,148 inhabitants. The population of Orizava and Cōrdŏvă is employed principally in the cultivation of tobacco and coffee. The towns contain likewise several distilleries, and a number of Colmenares, (bee-hives,) which are increasing daily in importance.

In the department of Ăcăyūcăm there are three cantons, (Acayucam, Tustla, and Nŭimanguillo,) twenty-three Pueblos, and 33,354 inhabitants. Cotton is the principal agricultural production, and twenty-five thousand "tercios" of it, (12,500 cargas,) were formerly the average annual amount raised. This is now reduced to about 800 tercios, there being no demand in the native manufactures, and the Cotton being without value as an export, until machines for cleaning, and compressing it, are erected, none of

which are at present known. Of its probable future importance, I have expressed my opinion in the third Section of the first Book.

The total registered population of Veracruz appears by the above statements to be 233,705 souls.

The receipts, from October 1824, to December 1826, amounted to 650,657 dollars, and the expenditure to 350,796 dollars.*

From the State of Oăxācă I have been unable to obtain returns similar to those given respecting other parts of the Federation. Agriculture is highly favoured by the mildness of the climate, which produces both cerealia and the sugar-cane; but of the mineral riches of the province very little is known. Mr. Glennie entertains a very high opinion of the new mines belonging to the United Mexican Company at Tēŏjŏmūlcŏ; (forty leagues South of Oaxaca,) but, in general, the mines in that State have been worked with so little science, and distinguished by so few great Bonanzas, that I am unable to give any positive information respecting them. Had I remained another year in Mexico, I should certainly have explored the whole territory of Oaxaca, and particularly the Mīstĕcă, where the cochineal is raised. The Indians employed in its cultivation are said to be a race much superior to the other tribes upon the Table-land. The women are called

* Noticia Estadistica submitted to the Supreme Congress by the Governor of Veracruz, Don Miguel Barragan, 25th of January, 1827.

the Circassians of Mexico, and most of the families are affluent, above a million of dollars being annually employed in the Misteca in the purchase of cochineal. Besides these attractions, Oaxaca possesses the famous cypress tree of Santa Maria de Tule, (a village three leagues East of the Capital of the province,) and the palace of Mitla. The first is ninety-three English feet and a half in circumference, yet does not show the slightest symptoms of decay; and the second may be regarded as the most curious monument of antiquity now remaining in the New World. I can add nothing respecting Mitla to the details given by Humboldt in the second volume of his work upon Mexico, and the engravings published in his American Atlas, except the dimensions of the stones which cover the entrances to the principal hall. According to Mr. Glennie's measurements, (to whom I am likewise indebted for the dimensions of the cypress of Tule,) the three largest of these stones are:—

	Length.	Breadth.	Thickness.
1.—	19 ft. 6 in.	4 ft. 10 in.	3 ft. 4 in.
2.—	18 8	4 10	3 6
3.—	19 7	4 10½	3 9

They are all seven feet from the ground, and the ends of each rest upon slabs measuring eight feet six inches, by six feet nine inches, and four inches thick.

Yŭcătān and Tăbāscŏ are two of the poorest States in the Federation. The first comprises an

area of 3,823 square leagues; on parts of which, maize, frijoles, cotton, rice, tobacco, pepper, and the sugar-cane, are grown, with die-wood, hides, soap, and other articles. But the scarcity of water in the central parts of the Peninsula, where not a stream of any kind is known to exist, and the uncertainty of the rainy season, render the crops very variable; and years frequently occur, in which the poorer classes are driven to seek a subsistence by collecting roots in the woods, when a great mortality ensues in consequence of their exposure to a very deleterious climate.

The population is estimated at one hundred and thirty souls for each square league, or 496,990 in all. The territory is divided into fifteen departments, Băcălār, Cămpēchĕ, Ichmūl, Izămūl, Isla del Carmen, Jequelchakan, Jŭnūcmă, Lerma, Māmă, Mērĭdă, Oxhūzkăb, Sēybă Plāyă, Sŏtūtă, Tĭzĭmīn, and Valladolid. Merida is the capital.

Yŭcătān contains no mines. An active intercourse was formerly carried on with the Havanna, which Yŭcătān supplied with Campeche wood, salt, hides, deer skins, salted meat, and the Jĕnĕquēn, a plant from which a sort of coarse thread (pita) was made, and worked up into sacking, cordage, and hammocks. This trade was cut short by the war; and as few foreigners have been induced to settle in Yŭcatān, the inhabitants have derived but little advantage from the late change of institutions. The receipts of the State, in 1826, amounted to 213,127

dollars. The expenditure was 207,199; so that a small surplus revenue remained.*

Tăbāscŏ is divided into three departments, and nine "Partidos,"—Vīllăhĕrmōsa, Ūsŭmăcīntă, Năcăjūcă, Tĕāpa, Tăcŏtālpă, Jălāpă, Macŭspāna, Cūndŭacān, and Jālpa,—containing in all forty-eight Pueblos, sixty-three churches, five hundred and forty-three Haciendas, and 54,862 inhabitants. During the rainy season, a large proportion of the territory of the State is under water, and the communication between the villages effected by canoes. This circumstance is particularly favourable to the growth of cacao, which is supposed to have been an indigenous plant. It is now cultivated to a considerable extent, twelve thousand cargas, (each of 60lbs.) having been exported in the year 1825. With the cacao coffee is likewise grown, but the exportation has never exceeded three thousand quintals. Tabascan pepper, (Pimienta Malagueta ò llainada,) is found in great abundance on the banks of the rivers. Indigo and vanilla grow wild, though very little attention has been hitherto paid to them; and the cultivation of tobacco, which seems to be the spontaneous produce of the soil, has been prohibited by the decree of the 9th of February, 1824, by which the privilege of raising this plant was reserved to the districts of Orĭzāva and Cōrdova, in order to facilitate the organization of the tobacco revenue.

* Memorias de Estadistica remitidas por El Gov^o de Yucatan à la Camara de Senadores, 1826.

The receipts of Tabasco in 1825, were 40,134 dollars, and the expenditure 29,879; but the estimate for 1827, including the Contingent, the establishment of a printing-press, and schools, amounted to 49,415 dollars, which it was hoped that the revenue might be made to cover.*

* *Vide* Estadistica remitida, &c., dated Villa Hermosa, 19th June, 1826.

SECTION VI.

RETURN TO ENGLAND BY THE UNITED STATES. —CHARACTER OF THE CREOLES — FEELINGS OF THE COUNTRY WITH REGARD TO THE PRESENT SYSTEM—CONCLUSION.

I PASSED three months in the Capital, after my return from the North; at the expiration of which time, my successor, Mr. Pakenham, having arrived, I set out for Veracruz, in company with Mr. Rocafuerte, and Captain Vernon, of His Majesty's sloop Primrose, who was commissioned to convey us to England, with the ratified copy of the Treaty, which had just been approved of by the Chambers.

We quitted Mexico on the 23d of April, and proceeded by Ŏtūmbă, Āpăn, Piedras Negras, and Vĭrēyĕs, to Pĕrōtĕ, Mrs. Ward being no longer in a state either to travel on horseback, or to support the violent motion of a coach, in crossing the mountains between Mexico and La Puebla. At Jalapa,

where we were detained several days in order to allow time for the money sent by the April "Conducta* to be shipped, we found most comfortable lodgings in a house which Colonel Dashwood had the goodness to engage for us, while his hospitality supplied all our other wants. We dined with him every day during our stay; and, under Mrs. Dashwood's direction, we made several delightful excursions in the environs of the town, the beauties of which seemed to grow upon us, as we explored them more narrowly.

On the 6th of May, having received intelligence that the Primrose was ready for sea, we slept at Plan del Rio, which we quitted at three o'clock on the morning of the 7th, in order to avoid the heat as much as possible. We breakfasted about seven at Puente del Rey, and reached the Boca del Potrero at two, where we passed the night. On the morning of the 8th we arrived at a very early hour at Veracruz, and embarked almost immediately, after taking some refreshment at Mr. Welsh's house, while our luggage was sending on board.

I rode almost all the way from Jalapa, notwithstanding the heat, which I did not find nearly so oppressive as I had expected. The rest of the party performed the journey in litters. Hilario and one other servant from the Table-land, accompanied us,

* "Conducta" implies the mules laden with silver, which leave the Capital once every two or three months for the coast, with a strong escort.

having volunteered a service, for which their countrymen in general feel the greatest repugnance, at a season when the *Tierra Caliente* is certainly not traversed without danger.

Veracruz was exceedingly unhealthy at the time of our departure. Several persons had been already attacked by the vomito, and Mr. Rocafuerte's servant, a Spaniard, shared the same fate: he was taken ill on board the Primrose, and died the fifth or sixth day. A young midshipman (Mr. Anson), who contracted the disorder while on shore for an hour in the morning with the boat that brought us off, was more fortunate. Youth and a vigorous constitution carried him through it; but he was very much reduced for a long time, and did not entirely get over the attack for some weeks.

The Primrose was under weigh when we embarked, and, the wind being fair, in a very few hours we lost sight of the Mexican coast. On the following evening, however, we again anchored off Tampico, to ship some more dollars, which were not put on board till the 12th, in the afternoon, when we sailed definitively for the Havanna. From thence we proceeded to New York, where the Primrose remained a week, both Mrs. Ward and the children being so much reduced by the rough weather which we had experienced, that it would have been absolutely dangerous for them to have crossed the Atlantic without some rest and relaxation on shore. Captain Vernon and I took advantage of this delay

to visit Washington, where we met with a most kind reception from my old friend Mr. Vaughan, under whom I had passed a year of my life, when attached to the Embassy of Sir Henry Wellesley at Madrid.

Washington is but little worthy of the reputation which it enjoys. It is the mere skeleton of a great town; and the houses being mostly built in the style of the architecture by which our own country is so much disfigured, with high gable ends, small doors, and cross lights in every direction, there is little to see, and less to admire. The real capitals of the United States are the great commercial cities, and of these the Americans may justly be proud. We passed through Philadelphia and Baltimore on our way, and in both these places, as well as in New York, we found ample proofs of an active, thriving, and powerful country, abounding in energy and wealth, and only requiring to be known in order to be duly appreciated. I will not fall into the error, so common amongst travellers, of passing judgment upon an empire, after a week's examination of its resources; but I will say, that those writers who have fostered the prejudices generally entertained in England with regard to American manners, and in particular as to their individual feeling towards ourselves, have rendered both countries a very great disservice. Captain Vernon and I found our character as Englishmen, sufficient to ensure us both civility, and attention, from our very numerous fellow-passengers on board the steam-boats, in which a great part of

the journey to Washington is performed; and both in the capital and at Philadelphia, we required no other passport to open the doors of several highly respectable houses.

Without participating in all Mr. Waterton's enthusiasm with regard to the American women, it is difficult for the most casual observer not to be struck with their appearance; nor do I know any part of the world (not even excepting England) where the display of female beauty is more striking than at New York, and Philadelphia, where, from the warmth of the climate, the light dress of the South of Europe is seen in conjunction with the freshness, and bright colouring of a Northern complexion.

We found our invalids entirely restored to health by their stay at Staaten Island, from whence they removed, after performing a quarantine of four days, to the hospitable house of Mr. and Mrs. Buchanon, to whose attentions we were all much indebted. On the 21st of June we embarked again, and on the 16th of July, we anchored at Spithead, after a quiet and prosperous voyage, during the whole of which we had daily and hourly reason to be grateful for Captain Vernon's unremitting kindness. The Primrose was much too small for the accommodation of so large a party as ours; and as, after a thousand ingenious contrivances, there was only room for one female servant, a Mexican woman, who was almost constantly unwell, the children, the eldest of whom was just two years

old, could not be properly attended to, and were a frequent source of discomfort and trouble. They were nursed, in turn, I believe, by all the ship's company, and formed a particular alliance not only with the officers, who were very kind to them, but with the boatswain and many of the men, who used to carry them about to every part of the ship, and introduce them to places which young ladies are not much in the habit of frequenting. To add to our embarrassments, Mrs. Ward was confined on board, ten days before we reached Portsmouth, when the maid's whole attention was of course devoted to her. The little girls were transferred to my cabin below at night, and during the day were kept either upon deck, or in the only part of the ship which Captain Vernon could call his own, (half the poop-cabin,) where he slept, and we all dined, separated from Mrs. Ward by nothing but a light partition, with an opening below to allow the tiller to traverse.

I am happy in having an opportunity publicly to express our acknowledgments to Captain Vernon, for the good-humour with which he endured the breaking up of all the comfort of his pretty establishment on board. Few men would have supported so long, and so severe a trial, with such patience as himself; and fewer still would have exerted themselves, in the midst of it, as he did, to promote, by every attention in his power, the comforts of his passengers.

Mrs. Ward, notwithstanding the want of a thou-

sand things which her situation required, but which could not, of course, be procured on board, recovered wonderfully, and on the 17th we were enabled to transport her in a cot to the Isle of Wight, where she gradually regained her strength, although much shaken by the fatigues which she had undergone.

Having thus brought my own story to a conclusion, it only remains for me to add a few observations upon points, which have either not been included in the preceding Sections, or, with regard to which, my opinions have undergone some modifications, in consequence of subsequent events; premising, as an apology for this irregularity, that, in order to prevent loss of time, my manuscript has been put into the hands of my publisher as written, and that, consequently, I am concluding, in 1828, a work, the first volume of which was in the press in December, 1827.

Our information with regard to Mexico has hitherto been so extremely circumscribed, that the details into which I have entered in the three last books, will, I hope, be excused, in consideration of the novelty of the subject.

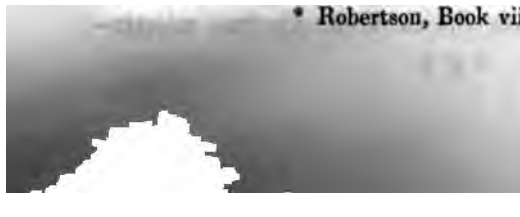
To those who have studied the Essai Politique, the use which I have made of this admirable work in many parts of my own, will be sufficiently apparent. Indeed, to write a book upon Mexico, without referring to Baron Humboldt at almost every page, is nearly impossible. He first applied the lights of science to the New World. He discovered, and ex-

plained the peculiarities of climate and structure by which Mexico is so much favoured; and traced, with the hand of a master, the outline of that vast picture, which present and future travellers can only assist in filling up. I have endeavoured, however, in availing myself of the sanction of this great authority, not merely to transfer to my own pages information better communicated in his, but to carry on the view which he has taken of each subject up to the present day, and to institute as exact a comparison as possible between the state of things as represented by him in 1802, and as seen in 1827 by myself.

Before the appearance of the Essai Politique, the works of Robertson comprised all that was known in England, or, indeed, in Europe, with regard to the Transatlantic possessions of Spain, and from these but little information is to be derived that will apply to the present condition or prospects of the New States.

Wherever diligent research could supply the place of personal observation, Robertson's views are just, and his reasoning excellent. His errors arose from the impossibility of obtaining information with regard to many points, upon which the labours of Humboldt first threw a light. I have had occasion to point out some curious mistakes with respect to climate, and mines; and Humboldt has demonstrated the erroneousness of his calculations respecting the amount of silver raised, as well as his miscon-

ception of the value of the revenue derived from Mexico by Spain. But many parts of his Eighth Book (on the Colonial Policy of the Peninsula) are wonderfully correct; and in particular his observations both upon the mild spirit of the first Leyes de Indias, and the impossibility of enforcing them. His eulogy of the Council of the Indies,* though sound in theory, was not equally so in practice. It produced latterly none of those good effects, which were contemplated upon its first institution. The responsibility of the higher officers before it, as a tribunal, was merely nominal. Not one Viceroy suffered by the sentence of Residencia, with the exception of Iturrigaray, who did not deserve the severity with which he was treated. The schemes of improvement submitted to it were buried in the Archivo-general de Indias at Siguenza, where they still remain unnoticed and unknown. The most unjust decrees were obtained by bribery; and, latterly, the influence of the members of the Council was employed principally in stifling complaints, and supporting their respective protegés in the Colonial Audiencias against charges, which ought to have led to their immediate dismissal. In lieu, therefore, "of attributing to the wise regulations and vigilant inspection of this respectable tribunal, whatever degree of public order and virtue still remained in the Spanish Colonies," I should say that nothing had



* Robertson, Book viii. p. 20.

tended so directly to destroy both as the conduct of the Council of the Indies; which, by poisoning the very fountain of justice, convinced the Creoles that in the Old, as in the New World, it was equally unavailing for them to seek redress.

Robertson is likewise incorrect in what he states respecting Castes, and the natural antipathy between the Indians and the Negroes. Wherever there have been African slaves in America, it will be found that they have not only intermarried with the Aborigines, but are positively blended into a new race; and it was the extent to which this connexion had been carried, and the impossibility, (from its numerous ramifications) of proving themselves free from a taint of Negro blood, that occasioned such universal dissatisfaction amongst the Creoles, when the Cortes (in 1811) deprived of the rights of citizenship all those who were in any way contaminated by African descent.

Nor is Robertson's view of the character of the Creoles (Book viii. p. 32) at all to be relied upon. It is drawn not from nature, but from a bad likeness, sketched by no friendly hand. In considering what they were, we must bear in mind the prohibitions under which they laboured, and the very narrow circle to which their natural activity was confined. What inducement was there to acquire information, or to cultivate science, in a country where the labour of early years could be turned to no account in the career of maturer life? From the bar and the

church the young Creole was excluded; or, at least, if he entered either profession, he knew that to rise in it beyond a certain point could never be his lot. He could not hope to be rewarded for his exertions by the approbation of his countrymen, for the press was closed upon genius; and even in private society, from the jealous watchfulness of the Inquisition, freedom of discussion was unknown. There was nothing, therefore, but an absolute thirst for knowledge, unusual even in the most polished countries, to animate him in the pursuit of acquirements, of which he was forbidden to avail himself when attained: and none can wonder if, with so few incitements to exertion, vicious indulgence occupied but too large a portion of his time. But the Revolution has proved that the Creoles are capable of better things. The estimable parts of their character are rapidly developing themselves; and the field now open for the display of that energy, of which, during the Civil War, they have given such fearful proofs, seems to have called into life the qualities requisite in order to turn it to account. From what I have seen of the Mexicans, I should say that they possess great natural shrewdness and ability: they are brave, hospitable, warm-hearted where met with kindness, and only too magnificent in their ideas of what the intercourse of society requires. From a fear of not doing enough, they often do too little; but whatever they attempt is executed with a splendour, which is at times almost embarrassing.

In 1826, being anxious to have our eldest little girl baptized, we solicited the Count and Countess Regla, with whom we were upon very intimate terms, to be her sponsors. They consented with great readiness and satisfaction, on condition that the whole management of the ceremony should be left to them; and on receiving a promise to this effect, (given without any idea on our part of the consequences to which it was to lead,) a splendid church ceremony was prepared, with hundreds of wax-lights, and music, and crowds of attendants; and this again was succeeded on the following day by a dinner of twenty people, and by presents of diamonds, for which it was impossible for us to make any adequate return, while to reject them would have been regarded as a mortal offence.

From Don Pablo de la Llave, (at that time Minister of Ecclesiastical Affairs,) by whom the service was performed, we likewise received a certificate of baptism, printed on silk and inclosed in a gold frame, with all the names of the child duly inscribed upon it. Frances was the only one selected by ourselves, but to this were added Guădălūpĕ, (in honour both of the Virgin of that name, and of the President,) and Felipa de Jesus, in commemoration of the only Mexican Saint acknowledged by the Church of Rome.

It is needless to add that we felt most grateful to the Regla family for their kindness upon this occasion. It had the effect, however, of preventing

me from having another child baptized in Mexico, for I was determined not to lay myself a second time under similar obligations, and felt sure that had I applied to any other friends, nothing would have induced them to do less than had been done by Count Regla before them.

The extension of one of the sacraments of the Catholic church to the child of a notorious heretic, may be regarded as no mean proof of the diminution of those intolerant feelings with regard to foreigners, which, at the commencement of our communications with Mexico, were so universal throughout the country. As late as May 1825, the Capital itself was not exempt from them; for, in the discussion respecting the religious article of our first treaty, some of the more devout amongst the members of the Senate objected to the concession of the right of sepulture to His Majesty's subjects, as a privilege to which heretics were not in any way entitled. Nor would the point have been carried without some difficulty, had not Mr. Cañedo, (a very distinguished Senator,) placed the arguments of these most conscientious persons in a proper light, by saying that, "Although he perfectly agreed with his worthy colleagues in principle, he foresaw some practical difficulties in the accomplishment of their wishes, which would compel him, though most reluctantly, to vote against them. The melancholy influx of foreigners could not be denied, nor was it to be expected that, amongst so many, some should not be summoned, during their

residence in the Republic, to receive, in another world, the penalty of their unbelief in this. What, then, was to be done with the bodies? He saw but four modes of disposing of them; namely, to bury, burn, eat, or export them. To the first, his Reverend colleagues seemed to object: the second, might prove inconvenient from the scarcity of fuel: in the third, he, for one, must decline any participation; and as to the fourth, dead heretics not being included amongst the exportable commodities mentioned in the Tariff, he feared that such an innovation might seriously embarrass the custom-house officers upon the coast. He should, therefore, upon the whole, incline for burial, as amongst four serious evils it appeared to him to be the least."

The speech, of which the above is a literal translation, put an end to any farther discussion, and the article was carried by a large majority. But the fact of such a question having been mooted at all in one of the chambers of the Supreme Congress, sufficiently indicates how little was to be expected from the lower orders, when even the more enlightened were not ashamed to acknowledge opinions so much at variance with the liberal institutions of the State, and the freedom of intercourse which they professed to court.

The beauty of the climate of Mexico has, I think, been a good deal overrated. It is true that the Table-land is exempt from those diseases which prove so fatal to foreigners upon the Eastern and Western

coasts, (the Vomito, and the Cholera Morbus,) and that, from the greatness of the elevation, the action of the sun upon the marshes in the vicinity of the Capital does not produce agues, or other fevers, to which the *Tierras Calientes* are subject. But, on the other hand, the rarefaction of the atmosphere is fatal to all who have any tendency to pulmonary complaints; while, from the extreme difficulty of inducing perspiration, rheumatism, to which foreigners are peculiarly subject, often takes such a hold upon the constitution, as to set all ordinary remedies at defiance. Inflammatory fevers are likewise very common; and, during the months when the sun is vertical, exposure to its rays is not unattended with danger. I lost a servant, upon my first arrival in the country, by a *coup de soleil;* my little girl was nearly killed by a similar attack; and I conceive the madness of a groom, who accompanied me on several of my journeys, to have proceeded, in some measure, from the same cause. Amongst the natives, scarlet fever, and measles, often become epidemic disorders, and occasion an extraordinary mortality. In 1825 fifteen thousand persons were carried off by them in the Capital alone, and their ravages extended from North to South throughout the Table-land. The number of deaths was, however, attributed by medical men more to the want of proper food and care, than to the virulence of the disease itself, which was seldom attended with fatal effects in families where proper precautions could be taken.

I have said nothing of the organization of society in Mexico, because, in fact, there is none. In the Capital, evening-parties and dinners, except upon some great occasion, are equally unknown. After the Paseo, or evening promenade, which takes place between five and seven, every body goes to the theatre, and after the theatre to bed. The Mexicans have not yet acquired the European habit of meeting frequently in small parties for the promotion of social intercourse. They accept invitations with pleasure from foreigners, but cannot divest themselves of the idea that where any thing is to be given on their side, a degree of superfluous display is requisite, which renders the frequent repetition of such entertainments impracticable. It is only in their Haciendas that they indulge without restraint in the hospitality to which they are naturally inclined. Of the women, in general, it is unnecessary for me to speak in much detail. Their manners and education are just what a person acquainted with Spain would expect to find in a Spanish colony. So little is required of women in the Mother-country, that it would be hardly fair to expect any very great intellectual superiority amongst their descendants. The Mexican ladies, (with some brilliant exceptions, whom it would perhaps be invidious to name,) read and write in about the same proportion as those of Madrid; they speak, in general, no language but their own, and have not much taste for music, or knowledge of it as an

art. They are not, certainly, amongst the exceptions to Madame de Stael's celebrated axiom, that "*hors de Paris, tout le monde parle de son voisin, ou de sa voisine,*" for in this respect Mexico is most thoroughly a "Petite ville." But in return, they have no affectation or hauteur, they are kind and unpretending in the highest degree, and do the honours of their houses with perfect ease and propriety. They possess considerable natural talents; and although in 1824 they undoubtedly were a little fonder of smoking, and a little less attentive to personal appearance at home, than would be thought engaging in London or Paris,—before I left the country in 1827, a wonderful change had taken place. Cigars were banished from all places of public resort, and, even in private, were falling gradually into disuse; while, with regard to dress, European fashions had entirely taken the place of those glaring colours, by which but too many of the prettiest women were disfigured on the first opening of our intercourse with New Spain. Nor can I omit stating, that, from the first, they showed a delicacy of feeling, and tact, with regard to Mrs. Ward, for which she has always felt grateful, by abstaining from smoking whenever she was present, (and that not only in her house, but in their own,) lest it should prove in any way offensive to her English ideas of politeness, or decorum.—In good society the most marked respect is always shown to the female sex, and all the obsequiousness of old Spa-

nish gallantry kept up, although intermingled, at times, with a good deal of that freedom of speech, which, under the name of "franqueza," has so much changed the tone of society in the Peninsula. It must be recollected, however, that this licence, however repugnant to the feelings of Northern nations, prevails more or less throughout the whole of the South of Europe; and that in Italy, as well as in Spain and Portugal, allusions are constantly made to subjects, which would be proscribed amongst ourselves, without any idea of their inspiring that disgust, with which they must always be listened to by a really delicate mind. It is not just, therefore, to blame the Mexicans for doing that of which they had no reason until lately to suspect the impropriety. We ought rather to hope that they may find amongst their new friends better models to follow; in which case, I have little doubt, from the improvements which I have myself witnessed, that in a very few years, a complete reform will be effected.

As to morality, it is a subject upon which it is no business of mine to touch. There is, perhaps, not less vice in Mexico, but there is certainly not more than in many other countries which bear a fair character in the world; and there are many points upon which, as wives and mothers, the ladies of New Spain give an excellent example. I know few countries where, in as far as the means are within their reach, greater pains are taken with the rising

generation. The children of almost every respectable family are learning music, French, and drawing; and although there is a sad want of masters, such good desires cannot fail, in a little time, to be productive of a happy effect.

This anxiety on the part of the parents to secure to their offspring advantages, which have, in many instances, been denied to themselves, is a part of that revolution which the last few years have wrought in the feelings and wishes of the Creole race.

After three centuries of implicit obedience, and uninterrupted mortifications, they have sought, in an entire change of system, that relief, which might have been afforded by a simple modification of the old institutions, had such a concession been compatible with the principles upon which the Colonial policy of Spain was founded during the days of her power.

It is difficult to conceive any country less prepared than Mexico was in 1824 for the transition from despotism to democracy. The principles upon which the present Government is formed, were at first neither duly appreciated, nor generally understood; yet from the mere force of circumstances they have taken root, and have already struck too deeply into the soil to be easily shaken.

Their hold upon the country is founded neither in a general diffusion of knowledge, nor in what might be termed theoretical patriotism; it rests

upon a still surer basis, the passions and interests of the most influential classes of the inhabitants.

To the mass of the people all forms of government are indifferent, and many do not yet know under which they live; but amongst those who alone possess a political character, the resident landholders, the merchants, the military, the lawyers, and the parochial clergy, considerations of local and personal advantage have created a decided feeling in favour of the Federal system.

In each State, a field is opened by it to every citizen, upon which few think themselves too obscure to venture, although they might not have aspired to political honours beyond the limits of their own provinces. In a small circle every thing is a source of distinction; and thus the multiplicity of petty offices created by the State Legislatures, though disadvantageous in one sense, by increasing the expences of the country, is of use in another, by bringing home to all classes the advantages of a change, which places employment, and a sort of rank in the world, within the reach of the humblest individual.

It was natural that, in a country where the natives had been excluded for three centuries from any share in the management of their own affairs, these considerations should have great weight; but I confess that I was not prepared to see *State* interests, and *State* feelings become so universally predominant as they have done during the last two years.

Another advantage with which the subdivision of

authority has been attended, is the neutralization of rival interests. The Revolution left behind a number of turbulent yet influential officers, who, under any central form of government, must have proved dangerous candidates for power, but who have now found in their respective States that employment which the Supreme Government could not have given to all. Many have become, under these circumstances, useful and efficient servants to the public, whose restless spirits, if not provided with a proper vent, would have involved them in enterprises fatal to the tranquillity of their fellow-citizens.

No inference can be drawn as to the feelings of the country in general, with regard to the present institutions, by those displayed in the Capital, or its vicinity; where a party spirit of the most violent kind has been gradually engendered, which, in a very recent instance, has led to disturbances of a most alarming nature.

With regard to the origin of these disturbances, it is difficult for me to enter into any details without overstepping those limits, within which it is my duty to confine myself. As it is, however, upon their tendency to affect the tranquillity of the country that its prospects in every way depend, I may, I hope, venture to lay before my readers a few remarks, without being thought to trespass upon forbidden ground.

The two parties which, under the denomination of Escoceses and Yorkinos, have been recently arrayed

against each other, are both Mexican in their origin, and entirely unconnected with Spain. The first is said to be composed of many of the largest proprietors of the country, (particularly those who possessed titles of nobility before the Revolution,) with a number of officers of distinction, and individuals of different professions, connected together by the bonds of a masonic society, supposed to be of Scotch origin, from whence their name of "Escoceses" is derived.

The reputed members of this association, (which is very ancient,) are mostly men of moderate principles, and sincere advocates of the cause of Independence. Many of them, however, belonged to the Creole army, and consequently opposed the leaders of the first insurrection, while others held situations under the Spanish Government upon the re-establishment of the Constitution in 1820, and were sent as Deputies to the Cortes of Spain before the declaration of Independence by Iturbide in 1821. It is upon these grounds that they are accused by their adversaries, the Yorkinos, of "Bourbonism," that is, of an attachment to the Mother-country sufficiently strong to induce them to wish for a Prince of the Royal blood of Spain as Constitutional king of Mexico. In this project there would have been no impropriety before the adoption of the present Constitution. I do not myself believe, however, that it extended, even then, beyond a very limited number of individuals; and I am convinced that it does not

exist as the object of a party in Mexico at the present day.

The Escoceses may more properly be assimilated to the "Federalists" of the United States, who, on the establishment of the Constitution in 1787, thought the Government founded upon it too weak, and were consequently reproached by their opponents, the "Democrats," with aristocratical notions, and a desire to convert the Republic into a monarchy. Yet General Washington was a Federalist, as was his successor, Mr. Adams, the father of the present President. In like manner, in Mexico, many of the most moderate and best-intentioned men in the country may be found amongst the Escoceses, upon whose interest General Bravo, (whose mild yet unvarying patriotism I have had occasion to dwell upon in the history of the Revolution,) came forward as a candidate for the Presidency in 1824. He was defeated by the superior influence of General Victoria; but next to Victoria's name, none stood so high as that of Bravo, and none had deserved more of his countrymen.

Up to 1825, the Yorkinos did not exist as a party. In the summer of that year, a number of individuals, not connected with the Escoceses, but not violently opposed to them before, were united as a rival sect, denominated "Yorkinos," because they derive their origin from the Masonic Lodge of New York, which transmitted, through Mr. Poinsett, the American Minister, the diplomas and insignia requisite for

the establishment of a branch lodge in the capital of New Spain. Without any disparagement to its members, of whom many are both useful and distinguished men, I may say that the largest proportion of the Affiliés of this society consisted of the *novi homines* of the Revolution. They are the ultra Federalists, or democrats of Mexico, and possess the most violent hostility to Spain, and the Spanish residents; whom the Escoceces have uniformly protected, both as conceiving them to have lost the power of injuring the country, and because, from the large amount of the capital still remaining in their hands, they think that their banishment must diminish the resources, and retard the progress of the Republic.

Having pointed out the characteristics of the two parties, it is neither my wish, nor my intention, to animadvert upon the manner in which the contest between them has been carried on. In a country just emerging from a great political crisis, there must ever be a bitterness of feeling on political questions, which older nations can hardly comprehend; although, a century ago, our own annals might have furnished a counterpart to its violence. In Mexico this feeling has been carried very far indeed. The Yorkinos, as new men, struggling to dispossess their adversaries of that power, which is the real object of both, were undoubtedly the assailants; but acrimony has not been wanting on the other side, and the personalities in which, for two years, the newspapers of the two parties have

indulged, prove but too clearly, that, under similar circumstances, nature is always the same; while liberty, in her infancy, only tends to develope more rapidly those passions, which appear, in every part of the world, to be most deeply implanted in the human breast.

The Yorkinos have made up by numbers for what they wanted originally in individual influence. Their plans have been prosecuted with great activity, and as the desperate appeal to the country, to which their opponents have just been driven, appears to have failed entirely, if they use their victory with forbearance, the success of their candidate, (General Guerrero,) at the approaching election for the Presidency, seems to be certain. But, upon forbearance, at the present crisis, every thing depends; for of General Bravo's devotion to the cause of his country but one opinion is entertained throughout New Spain. Should there be any attempt, therefore, to punish too severely a step, which all must deplore, although none can judge of its causes without a knowledge of the circumstances by which the passions, on both sides, have been excited, and the transition from political to personal hostility effected,—blood will be found to lead to blood, and a long series of calamities may still cloud the prospects of the Republic.

I trust, however, that these calamities will be averted. There are in Mexico a number of excellent men unconnected with either of the parties,

whose animosity has threatened the country with a civil war. At the head of these is General Victoria, in whose moderation, and thoroughly honourable intentions, the most implicit confidence may be placed. To him, and to his friends, I look for the preservation of tranquillity. Of its necessity he is thoroughly convinced; and his influence, if properly exerted, will, I think, be found sufficient to ensure it.

Short as the recent struggle has been, it has already done incalculable mischief, and destroyed the fair reputation which Mexico was beginning to acquire in Europe, by the fidelity with which her engagements with foreign capitalists were at first met. Dissensions, bordering upon civil war, in whatever causes they may originate, must tend to diminish the commercial demand, and with it the general resources of the country. The customs may be regarded as the basis of the whole revenue of Mexico; not only as forming in themselves its most important branch, but as facilitating the collection of all the other branches, by giving to the Executive that command of money, without which, in a new country, no system of administration can be organized, and no subordination enforced.

What my expectations with regard to them were six months ago, I have stated in the Fourth Section of the Third Book, in which I estimated their probable produce during the present year at eight millions of dollars. There is now not the least prospect that those calculations will be found correct. I am

informed that one-third of the orders given by our merchants for the present season have been countermanded, in consequence of the unsettled aspect of affairs, and of the embarrassment which the expulsion of the Old Spaniards has occasioned in the commercial world; and although the storm appears to have blown over, it is very questionable whether confidence will be entirely restored until the election for the ensuing Presidency, which takes place in October, be decided.

I shall now take leave of the only unpleasant part of my present subject. I have not traced the preceding pages without many painful feelings, for I am connected personally with most of the individuals of whom I have been compelled to speak. During three whole years, General Victoria honoured me with a most unreserved and confidential intercourse, while both with General Bravo, and with many of the leaders of the rival parties, I was on terms of frequent and friendly communication. I shall not, therefore, attempt to deny that I write under the influence of these recollections, and that feelings of a private, as well as a public nature induce me to hope that what has passed may be buried in oblivion; for the only mode of averting the evils, which must otherwise be brought upon the country, is for the victorious party to show itself worthy, by its moderation, of the ascendency which it has acquired.

I have already trespassed upon the patience of my readers to a much greater extent than I at first con-

templated when I undertook the task of preparing my notes upon Mexico for publication. I trust, however, that I shall not solicit their indulgence in vain for a few concluding reflections.

The want of distinguished men, or rather, of some one man so distinguished as to exercise, like Bolivar, an universal influence, has been much commented upon in Europe as disadvantageous to New Spain.

In one sense, it may, perhaps, be so, for it undoubtedly retards the progress of those parts of the country, which might be pushed forward in the career of civilization by that impulse, which power, concentrated in the hands of an individual, can alone give; but it secures, in return, the stability of the present institutions, by rendering innovations difficult; and whether those institutions be good or bad, it is not by any sudden or violent change that they can be amended.

It is likewise favourable to the gradual developement of the resources of the country, by removing those checks upon the activity of individuals, which the preponderance of any one man is generally found to create. In a territory so vast, and, as yet, so little explored, no central government, whatever its energy, or however beneficent its intentions, could possess sufficient local knowledge to do the good which it might desire to effect. Under the present system the whole internal arrangements of the States are left to their own care; and with some few restrictions with regard to foreign trade, they are

at liberty to adopt, without restraint, any plans of improvement that may suit the peculiarities of their respective territories.

Their ability to support this system I have had frequent occasion to investigate. To a certain extent it has been already demonstrated; and the journal of my visits to the Interior will prove that, wherever a man of activity has been placed at the head of affairs, a good use has been made by the Provinces of the free agency with which they are entrusted. In Guanajuato, San Luis, Durango, Jalisco, La Puebla, and Veracruz, as well as in some others of the Central and Northern States, important changes have taken place, and much has been done towards that gradual introduction of a better order of things, from which alone permanent improvement can be expected.

I am aware, that in giving this opinion, I expose myself to the attacks of two distinct classes of adversaries; first, those who refuse to admit the fact of any progress at all having been made; and secondly, those, who, from too enthusiastic an admiration of the new institutions, are unwilling to await the mild influence of time, and maintain that, by a proper exercise of Republican energy, roads might have been made, canals traced, rivers rendered navigable, the whole jurisprudence of the country reformed, a system of education generalized, and the work of a century compressed into a twelvemonth!

To the first, I should object that they have not, perhaps, taken a very deliberate view of the actual situation of New Spain, or that, at all events, in reflecting upon things as they are, they do not sufficiently consider the point from which the Mexicans commenced their new career. To the second, I can only say that I am not one of those who believe in the practicability of hot-bed reforms. It appears to me to be as impossible to force the human mind to advance too rapidly, as it would be to compel the present generation to revert to the superstitious credulity of the thirteenth century. Nor can a change of government be productive of a simultaneous change in the habits and opinions of the people governed. It may,—indeed it must, ultimately affect them. It may exalt or debase the national character, strengthen or enervate it, according as it affords more or less scope for the developement of individual talent, and more or less encouragement for its application to the public service: but no constitution, even if it came down from Heaven with the stamp of perfection upon it, could eradicate at once the vices engendered by three centuries of bondage, or give the independent feelings of free men to a people, to whom, until lately, the very name of freedom was unknown.

It will be sufficient for me, if I am thought to have shown in the work, which I have now the honour of submitting to the public, that in three years a great deal has really been effected; that the

resources of the country are unquestionable; and that the seeds of future greatness not only exist, but have begun to develope themselves to a very considerable extent. Internal tranquillity is alone requisite to bring them to maturity; and feeling, as I do, a lively interest in the welfare of Mexico, both from my long residence in the country, and my conviction that the commercial interests of Great Britain are most intimately connected with the prosperity of the New World, it is my fervent hope that this blessing may not be denied to her. Whatever else is wanting, nature and time will supply.

THE END.

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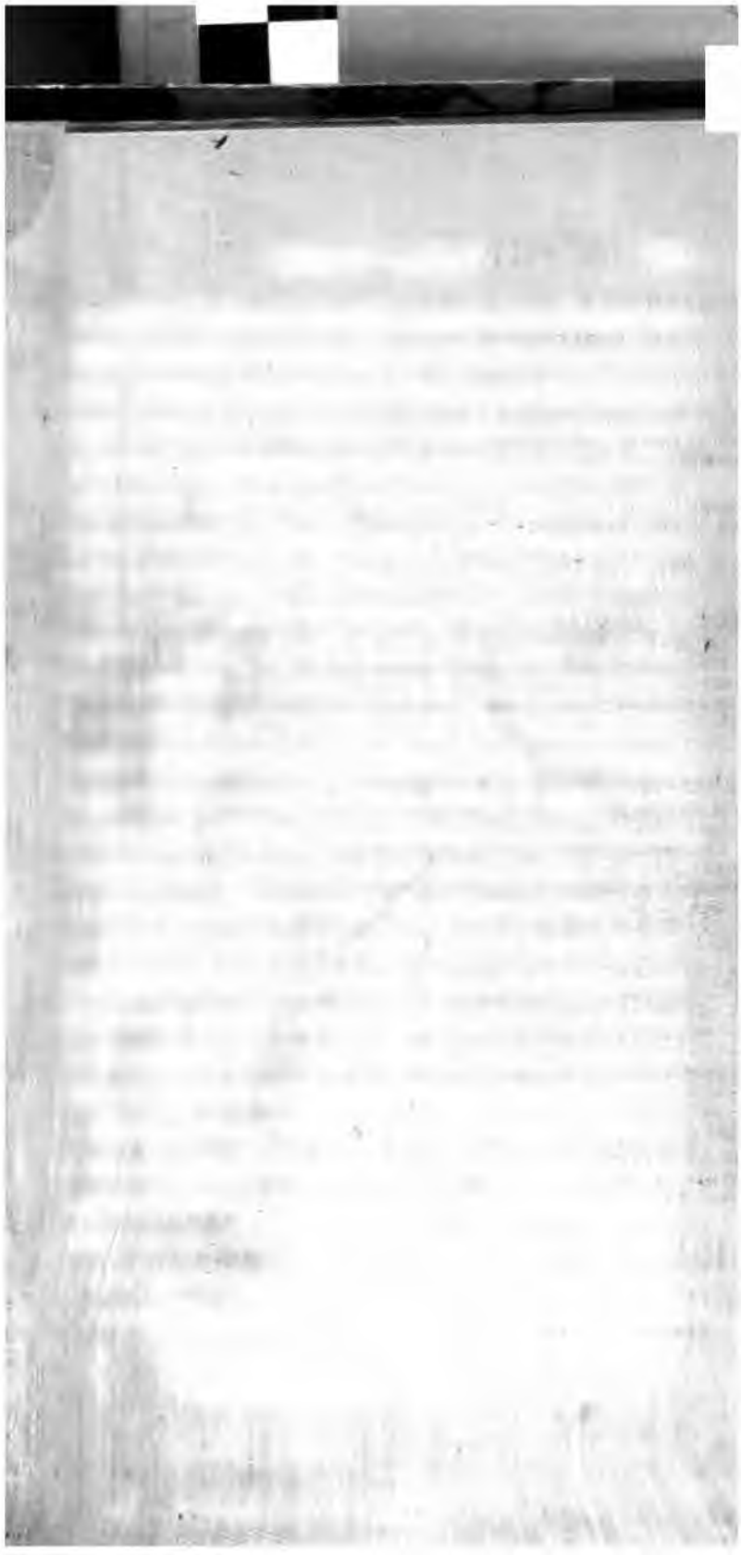

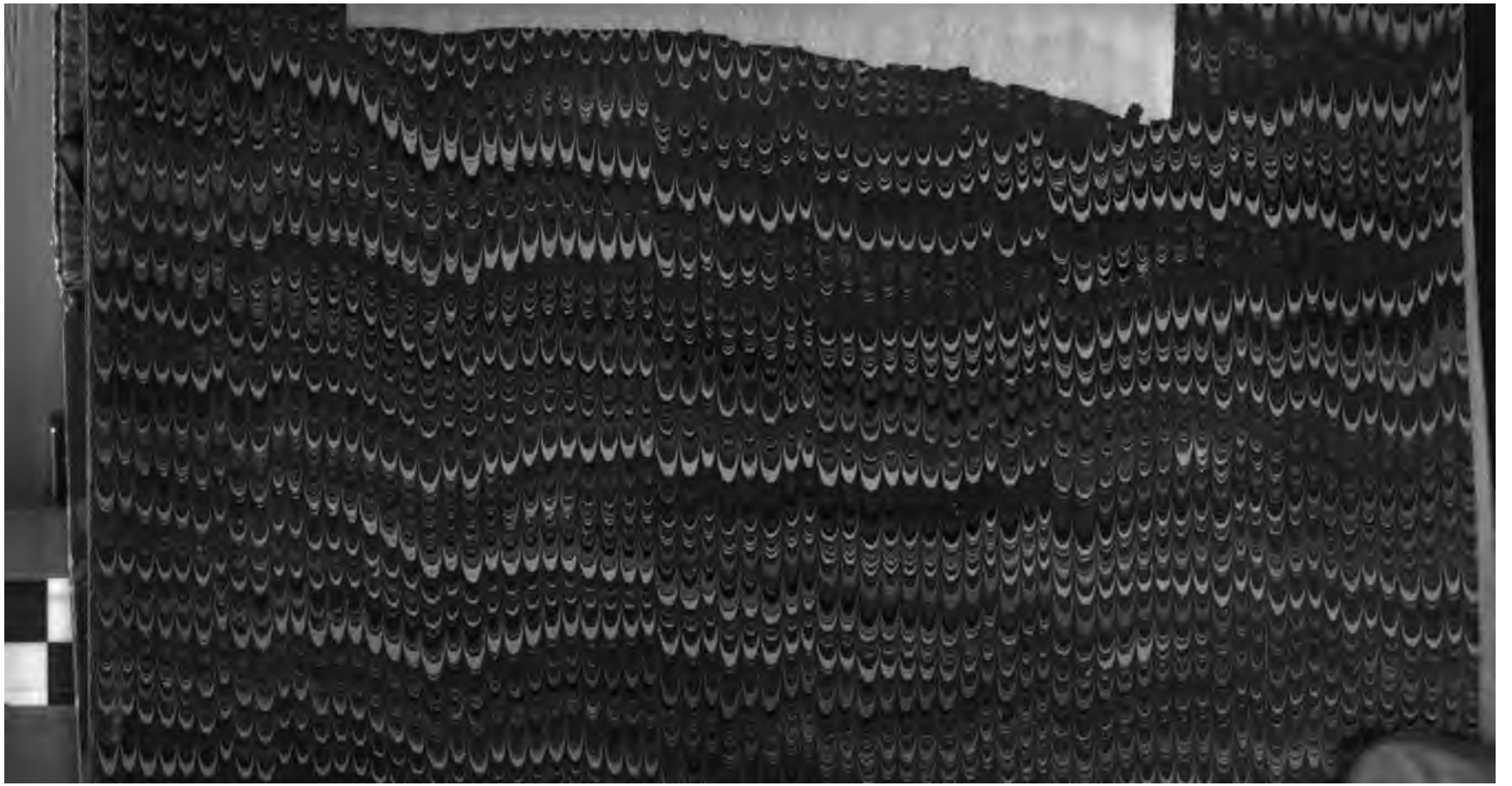

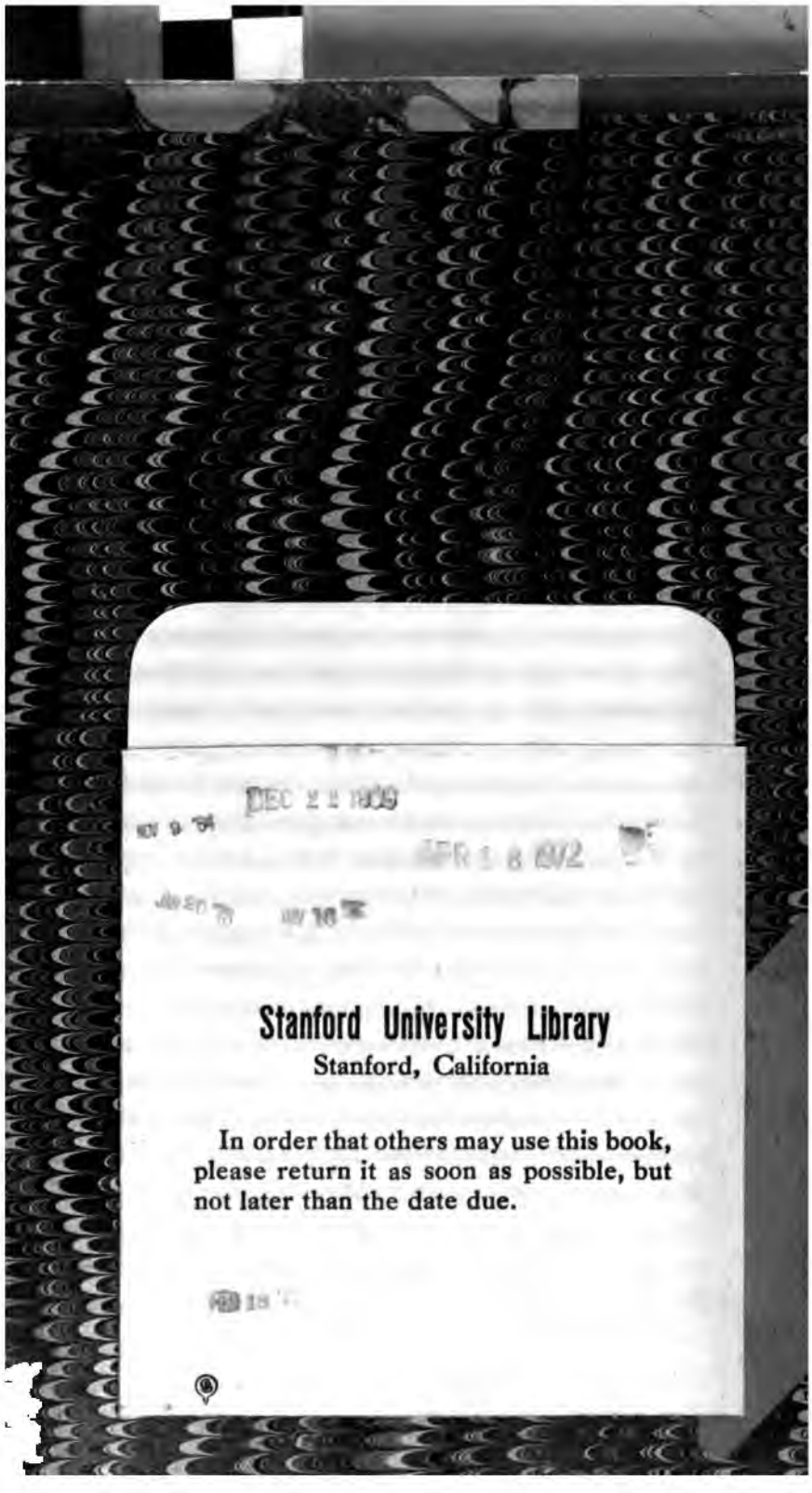
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